

**SOUTH AFRICA'S GROWTH TRAP:
THE CONSTRAINTS ON ECONOMIC GROWTH AND THE ROLE
OF WATER**

Report to the
WATER RESEARCH COMMISSION

by

HAROON BHORAT & MUMBI KIMANI
Development Policy Research Unit
School of Economics, University of Cape Town

WRC Report No. 2601/1/18
ISBN 978-1-4312-0004-0

July 2018

Obtainable from

Water Research Commission

Private Bag X03

GEZINA, 0031

orders@wrc.org.za or download from www.wrc.org.za

DISCLAIMER

This report has been reviewed by the Water Research Commission (WRC) and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the WRC nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

Printed in the Republic of South Africa

© Water Research Commission

This page was deliberately left blank

Contents

List of Tables	v
List of Figures	v
1. Introduction	1
2. Changes in the Structure of Economic Growth since 1994	2
3. Constraints on Economic Growth	9
I. Infrastructural Investment.....	10
II. Public service delivery.....	11
III. Education and Skills Development.....	12
4. Role of Water in Economic growth	12
I. Water as an input.....	12
II. Contribution of Water to the Growth Trap.....	14
a. Water’s Role in Creating Employment.....	14
b. The Role of Water in Reducing Poverty and Inequality	16
5. Conclusion.....	20
6. References	21

List of Tables

Table 1: Percentage change in contribution to GDP by Industry.....	3
Table 2: Employment elasticities, 1997-2012.....	8
Table 3: Share of Water Use Intensity per South African Economic Activity, 1991-2012	13
Table 4: Employment by skills and Unemployment share, 1994-2014	15
Table 5: Employment in the water sector, 2006-2013	15
Table 6: Value added and employment indicators of water use, 1995-2000.....	16
Table 7: Percentage of households with access to piped water, 1996-2015 Service.....	17

List of Figures

Figure 1: Percentage Contribution to GDP by Industry at Current Prices, 1994-2015	5
Figure 2: How water interventions affect poverty	17

1. Introduction

This is the second part of a two-part analysis series. The findings from the first part of the series indicate that the poverty level in post-apartheid South Africa has not changed, however, income inequality, as measured by Gini coefficient on per capita household income, has increased by 0.0338 points from 0.6625¹. The analysis further indicates that there has been an increase in household access to water, and that the increase has been highest among households in lower income deciles, which have experienced at least a two-fold increase. The report concludes that there is a divergence in South Africa's growth path and its overall poverty and inequality reduction, which consequently, has not yielded pro-poor growth.

Until recently, South Africa had been the largest economy in Sub-Saharan Africa. Its descent to second place can be partly attributed to its persistent low economic growth. When compared to other African economies that have been growing at unprecedented rates, its economic growth has been low and sluggish. This low growth has been accompanied by a low labour absorption rate, which has made the unemployment level remain constantly high. For decades now, the level has averaged 25 per cent by the narrow definition, and more than 30 per cent by the broad definition. The level is much higher amongst young people. Further, both poverty and inequality levels have been shown to have increased, in spite of the numerous government policies such as cash transfers and free basic services put in place to lift South Africans out of poverty and decrease inequality.

But there has been some measurable progress. A number of the aforementioned fiscal policies the South African government has initiated have managed to alleviate poverty, as measured by households living below USD2.50 per day. In 2014, the World Bank estimated that the number of poor households has dropped by half, from 34.4 per cent to 16.5 per cent demonstrating the impact of tax-free cash transfers and the provision of free basic services. Income inequality has also lowered, as measured by the Gini coefficient on disposable income: from 0.77, to 0.59².

At the national level, some policies have been shown to create more economic hurdles than spur economic growth. The government has been faulted for failing to efficiently allocate research and development funds towards sectors that would create jobs and encourage economic growth³. Evidence is growing (see for example World Bank, 2014 and Faulkner, Loewald & Makrelov, 2013) that in order to deal with the high unemployment levels, high poverty levels, and inequality, South Africa's growth needs to be pro-poor. The. Unfortunately, the economy is currently in a growth trap⁴, indicating that the country faces serious economic growth constraints.

In this second and final part of the series, we mainly focus our analysis on why South Africa remains in a long-run economic growth trap. . We also evaluate the role of water in the overall

¹ Bhorat, Ewinyu and Monnakgotla, 2017.

² World Bank, 2014.

³ Bhorat *et al.*, 2013.

⁴ Bhorat *et al.*, 2014.

economic process by linking it to the production process, and analysing the water sector's performance and contribution to the growth trap. The analysis proceeds as follows: The next sections discuss the overall changes in the structure of the South African economy, post-1994. This is followed by a brief analysis of some of the growth constraints that are specifically related to the water sector. The final section delves into the role of water in economic growth.

2. Changes in the Structure of Economic Growth since 1994

At the dawn of democracy in 1994, South Africa's economic growth had stagnated – a resulting consequence of the trade and financial sanctions imposed on the apartheid government. The structure of the South African economy has evolved since then, through changes that have been steered via three major economic programmes, namely: The Reconstruction and Development Programme (RDP), Growth, Employment and Redistribution (GEAR), and the National Development Plan (NDP). Using a descriptive analysis, we discuss these programmes and their effects on the structure of the economy, with a specific consideration to the water sector.

The RDP was introduced in 1994 as a framework to integrate growth, development, reconstruction, and redistribution⁵. It had people centred at the heart of rebuilding the new South African economy. One of its major programmes was on infrastructure, intended to make services such as water, electricity, telecommunication, transport, health, education and training, accessible to all South Africans. The infrastructure programme was meant to stimulate the then weak economy, through increased demand for materials and job creation. In its agenda on building the economy, it considered a priority the extension of water and sanitation services to 12 million people who lacked access to water, and 21 million people who had inadequate sanitation. Hence the policy “water security for all”. Under this policy, the government recognised the right of citizens to access water, and consciously acknowledged the economic value of water, therefore initiating a drive to encourage sustainable management of water resources.

According to the RDP there were two major issues affecting the economy: First, capital stock was aging and the manufacturing sector was contracting, which it attributed to capital flight and declining investments from both public and private sectors. Second, production, distribution and financial sectors were controlled by very large conglomerates, which led to ‘high degrees of monopolisation and blatant anti-competitive tendencies’⁵. To improve the economy these issues needed to be urgently addressed.

Although the two years (1994 and 1995) that the RDP was in place (as the only economic plan) is too short a period for any substantive analysis, it served as a starting point for the new South African economy growth trajectory, and the rolling out of its projects initiated changes in the structure of the economy. We therefore offer a highlight of sectoral changes by looking at their contribution to the growth of the economy. In Table 1 we present a sector analysis of the percentage changes in contribution to the GDP for the period 1994-2015, which we

⁵ Republic of South Africa, 1994.

divided by the three major economic programmes – RDP, GEAR and NDP. From the table, it is evident that the introduction of the RDP led to minimal increases of less than 1 percentage point in the contributions from more than half of the sectors. The highest increase is observed in the financial and business sector at 0.37 percentage points. Interestingly, the manufacturing sector follows in a close second, at 0.31 percentage points. The highest decline was in the agricultural sector at -0.74 percentage points, while the water sector had the least decline at -0.04 percentage points. As already noted, the two-year period is too short to draw any inferences from these statistics since there were unlikely to be any significant effects to have materialised in the economy.

Table 1: Percentage change in contribution to GDP by Industry

Economic programme Period	RDP 1994-1995	GEAR 1996-2011	NDP 2012-2015
Agriculture, forestry and fishing	-0.74	-1.67	-0.08
Mining and quarrying	-0.32	2.91	-1.28
Manufacturing	0.31	-7.05	0.39
Electricity and gas	-0.10	-0.18	0.11
Water	-0.04	0.24	0.06
Construction	0.02	0.39	0.26
Trade, catering and accommodation	0.17	0.70	0.08
Transport, storage and communication	0.21	-0.13	0.36
Finance, real estate and business services	0.37	5.35	-0.37
General government services	-0.07	-0.94	0.65
Personal services	0.19	0.38	-0.18

Source: Authors' calculation from Statistics South Africa data.

The RDP had ambitious developmental goals, which in hindsight, and as the government conceded in introducing a new economic strategy, were too broad and therefore needed to be stated more specifically for tangible implementation. The government also realised that the RDP proposed projects that could not be achieved without a higher than the average 3 per cent economic growth that the country was experiencing. Further, it lacked adequate funds to undertake some of the RDP proposed projects that required significantly large amounts of investment – particularly those that would address issues that were a priority such as the reduction of unemployment and inequality, and expansion of social service delivery. This cash shortfall was blamed on the large country debt incurred under the apartheid government, compounded by the continued low levels of economic growth and savings. The implementation of some of the RDP's projects was therefore brought forward to be undertaken through the GEAR programme.

In a bid to stabilize the economy in 1996, the government adopted Growth, Employment and Redistribution (GEAR), a five-year plan⁶. This programme was argued to be more of an instrument that would facilitate the achievement of RDP objectives, rather than act as a complete replacement of the RDP⁶. The major goal of GEAR was to achieve sustainable growth through an increase in the production of tradable goods; an increase in both private and

⁶ Republic of South Africa, 1996.

public investment, and restructuring of the public sector; an increase in industrial and infrastructural development; and an increase in the focus on human capital development. The implementation of GEAR resuscitated the economy, particularly by building new investor confidence and offering stability in consumer expectations. During its implementation period, which took place between 1996 and 2011, the economy experienced positive real annual GDP growth at about 3.2 per cent⁷, but it was not higher than the average experienced in 1994 and 1995. Between 2005 and 2007, however, the growth rate was above 5 per cent, and the decline thereafter was due to the global financial crisis. In this period, 1996-2011, there were significant changes in the structure of the economy.

From Table 1, it is evident that the percentage changes in contributions to the GDP indicate a 50-50 sectoral divide – six sectors had an increase, while five had a decrease in their contributions. The highest growth in share was in the finance and business services sector at more than 5 percentage points, followed by mining at almost 3 percentage points. This growth is not surprising given the global trend in the growth of the sector which has been spurred on by increased demand for services such as telecommunications, as well as the policy attention that the sector has received. Although the water sector remained the least significant industry by share in this period, it experienced an increase of 0.24 percentage points. The manufacturing sector experienced the highest decline of about 7 percentage points, followed by a 1.67 decline in the agricultural sector. While on the one hand, the decline in the share of the agricultural sector is not an indication of a decline in its productivity, since productivity increased (it is rather an indication of sectors such as services that are growing faster⁸). The decline in manufacturing on the other hand, can be attributed to a decline in productivity due to the sector's continued reliance on infrastructural investments and commodities. This has not been due to a lack of infrastructural investments, since they have been included in virtually in all government policies, but rather due to the failure of the investment made to boost manufacturing. Undoubtedly, the declining commodity prices have also negatively impacted on the sector's growth. Overall, the changes in the contribution of the other sectors were negligible.

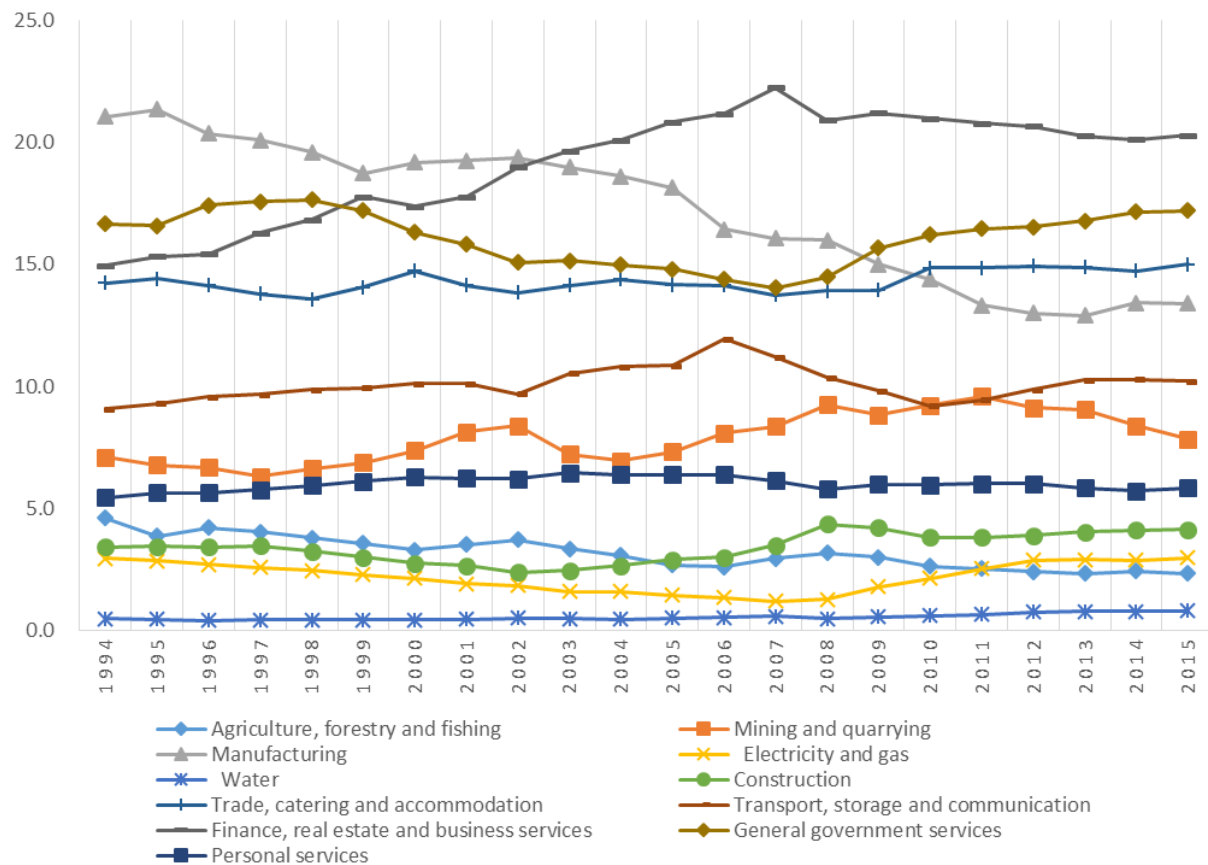
For an overview of these percentage changes through the years, we present their trend in Figure 1. In the period 1996 to 2011, the figure shows that the share of the financial services sector grew from about 15 per cent to 21 per cent in 2011, to become the leading sector. While that of manufacturing declined year-on-year from a high of 20 per cent in 1996, to a low of 13 per cent in 2011, to become the second largest contributor. By the end of the period in 2011, the top three sectors were all tertiary industries: financial services, government services, and trade, in that order, while the primary industries (agriculture and mining) declined to be amongst the bottom 5 sectors. The significant decline in the share of the manufacturing sector at the end of 2011 saw it drop further to the fourth position.

This simple analysis indicates a structural change in the economy where tertiary industries gained importance, followed by secondary industries, while primary industries remained at the bottom. Arguably, these changes were driven by the implementation of both the RDP and

⁷ Statistics South Africa, 2007.

⁸ Vink and Van Rooyen, 2009.

GEAR, particularly given that both programmes prioritised projects that focused on infrastructural investment and service provision. The effect of these changes in decreasing unemployment, poverty and inequality levels were, however, below expectation. During this period, unemployment remained persistently high, averaging above 20 per cent (by narrow definition), poverty levels remained high, and the levels of inequality increased⁹. Evidently, the positive economic growth did not provide the poor with opportunities, particularly through employment, to participate in, and benefit from, economic activities.



Source: StatsSA data (GDP annual quarter and regional revisions tables various issues), authors' calculation.

Figure 1: Percentage Contribution to GDP by Industry at Current Prices, 1994-2015

Acknowledging the need for a pro-poor growth strategy, the government launched the Accelerated and Shared Growth Initiative for South Africa (AsgiSA) in 2006. AsgiSA was project driven and aimed to hasten the achievement of the objectives set in GEAR. Through the implementation of projects in AsgiSA the government set to attain a growth rate of 4.5 per cent in the first four years, and about 6 per cent between 2010 and 2014¹⁰. This, it argued, was essential in order to significantly reduce the persistent unemployment to 15 per cent; to reduce the rate of poverty to a sixth of the poor; and to significantly reduce inequality by the year 2014.

⁹ Bhorat, Cassim and Hirsh, 2014.

¹⁰ Republic of South Africa, 2007.

According to RSA (2007), the economic growth achieved thus far had been imbalanced in two ways: First, the growth was largely bolstered by a combination of commodity prices, capital flows and growth in domestic demand, which did not favour non-commodity exports and made locally produced goods uncompetitive with imports. This resulted in a trade deficit of 4.3 per cent of the GDP in 2005. Second, this growth did not benefit about a third of the population who remained poor, and whose incomes remained low. In this regard, the programme outlined some of the challenges in achieving a pro-poor growth. These included: backlogs in infrastructure and investment, market structures that fostered a lack of competitiveness, a shortage in skilled labour, a restrictive market with monopolistic tendencies, an over-regulated environment that discouraged development of business, and the general lack of capacity and leadership in state organisations, which led to their underperformance.

To address these constraints, AsgiSA proposed six interventions, which included:

1. Increased investment in infrastructure from 6 per cent to about 8 per cent of GDP, with the bulk water infrastructure and water supply networks being among the key investment areas.
2. The encouragement of private sector investment in labour intensive industries, namely: business process outsourcing (BPO), tourism, and biofuels.
3. The promotion of skills acquisition through various school-based education and work-based programmes.
4. The bridging of the first and second economy in order to reduce inequality and include the marginalised poor in the economy.
5. The stabilization of the currency and inflation to levels that would enhance sustained and shared growth.
6. The building of capacity in government institutions to ensure good governance.

These interventions were to be implemented through various projects. In a study on the impact of AsgiSA's proposed projects, six of which were water intensive projects, Blignaut and Van Heerden (2009) show that a lack of careful consideration of policies accompanying the proposed projects was bound to further increase demand for water, with less gains in economic growth and employment¹¹.

In the late 2000s, the unfolding of the financial crisis and the political turbulence within the African National Congress (ANC) did not create a conducive economic and institutional environment for the implementation of AsgiSA's projects. In 2009, the change in presidency from President Thabo Mbeki to President Jacob Zuma ushered in a new economic strategy: the New Growth Path (NGP) framework. The NGP aimed to restructure the direction of the economy in order to deal with the economic constraints brought about by the financial crisis, while putting jobs and decent work at the heart of the economy¹². Focusing on the plans laid out in the RDP and AsgiSA, the NGP outlined the objectives it aimed to achieve in the short-, medium- and long-term. In the short-term, it aimed to increase employment through direct employment schemes, and offer more targeted subsidies. In the medium-term, it proposed to increase the development of labour-absorbing activities mainly in the agricultural, manufacturing and service sectors. In the long-term, its objective was to foster a competitive

¹¹ Blignaut and Van Heerden, 2009.

¹² Republic of South Africa, 2011a.

economy by encouraging knowledge- and capital-intensive development. Overall, the framework's microeconomic interventions such as those on the industrial, education and competition policies were very similar to those proposed in AsgiSA. In dealing with unemployment, the NGP aimed to grow employment by five million jobs by 2020, to increase the proportion of working population with paid wages by half, and to reduce narrow unemployment by 10 percentage points, to 15 per cent¹². It also envisioned 4 to 7 per cent economic growth rate, which it deemed was necessary to create jobs in order to achieve a 0.5 to 0.8 per cent growth in employment intensity. The private sector was at the centre of the job creation initiative. The NGP identified its main 'job drivers' to include investment in public infrastructure, encouraging labour-absorbing activities in the main economic sectors, and taking advantage of social capital, among others.

Following a countrywide consultative process, the government of South Africa and the ANC towards the end 2012, adopted the National Development Plan (NDP). Continuing the agenda of inclusive growth, in the financial year 2012/2013, the NDP was adopted as a long-term economic plan. The plan outlines the country's growth trajectory until the year 2030, and was to be implemented in stages. Currently, it is in its first leg of implementation through the Medium Term Strategic Framework (MTSF): 2014 to 2019. The MTSF outlines 14 priorities of the NDP, all of which support a radical transformation of the economy, and an improvement in service delivery. Having inclusive growth at its core, the framework proposes to increase employment by 10 percentage points through various programmes, such as: Public employment schemes; Improving the quality of – and increasing the number of – college graduates (so as to supply a skilled workforce for the economy); Increasing public and private sector investment in rail, water and energy infrastructure; and Improving public service delivery by putting in place mechanisms and structures that would help the various departments build staff capacity and professionalism; among others. Again, as is the case in all the previous economic strategies, the issues at the heart of this MTSF are education and skill development, investment in infrastructure, and improved service delivery.

As indicated in Table 1, which sectors are significant to the economy, and the trends in sectoral contributions to the GDP in percentage changes from 2012 when the NDP came into effect, to 2015 (notwithstanding the short period), paint a picture of continued change. From the table, it is evident that more than half of the sectors had an upward swing in their contribution. Notably, the government services, manufacturing, and transport sectors had a positive rebound, while mining, financial services, and personal services declined. The trend analysis in Figure 1 shows that most sectors experienced stability in growth, with the exception of the mining sector which had a year-on-year decline.

The changes in the structure of the economy discussed above have had varied effects on the growth of and employment in each sector. The elasticities of employment presented in Table 2 show that employment growth has not been responsive to GDP growth. This is in spite of the deliberate efforts by the government to promote employment-intensive growth, particularly through policies. From the simple elasticities estimated below we find a 1 per cent increase in GDP results in a 0.69 per cent increase in employment. Whilst absolute employment growth has been significant, calculated elasticities in Table 2 below confirm earlier findings that certain sectors have been more responsive to employment creation than

others Sectors such as agriculture, manufacturing, and transport, have elasticities furthest away from 1, indicating diminished capacity to create employment, unlike retail, finance and business, and community services, where elasticities are closer to or greater than 1, indicating higher levels of employment creation. Mining on the other hand, has an elasticity higher than 1; however this reflects the loss in both GDP and employment over the 1997 to 2012 period.

Table 2: Employment elasticities, 1997-2012

	Elasticities
Agriculture, forestry and fishing	0.37
Mining and quarrying	1.52
Manufacturing	0.22
Electricity, gas and water	-0.73
Construction	0.85
Trade, catering and accommodation	0.9
Transport, storage and communication	0.42
Finance, real estate and business services	1.2
Community, social and personal services	1.3
All Formal Sector	0.76
<i>Overall</i>	<i>0.69</i>

Source: StatsSA (LFS 1995, QLFS various issues, and GDP annual quarter and regional revisions tables various issues), authors' calculation.

In 1994, the top three GDP contributing sectors were community, social and personal services (CSP), manufacturing, and finance, but in 2015, finance, government and wholesale were the leading sectors, in that order¹. These changes have occurred in a stagnating economy, particularly one that has seen consistently high unemployment levels, persistently high poverty levels, and increased inequality. Overall, the changes have yielded convoluted outcomes, although in some cases, the effects have been directly evident in the economy, and the underlying causes can be pinpointed. Three points broadly discussed in Bhorat *et al.* (2013) stand out. Firstly, the decline in the manufacturing sector has been a significant challenge to the growth of the economy, and has led to a decline in employment levels due to job losses and a reduction in the creation of new jobs. The changes in employment levels in the economy have come about mainly due to sectoral shifts and differences in skill composition. The trends in sectoral shifts have included a decline in employment opportunities in primary and secondary industries, particularly in the manufacturing sector, a rise in employment opportunities in the tertiary industries, particularly in the public sector, and the growth of temporary employment services¹³. The changes in employment levels by skills have by far benefited skilled workers. Between 1994 and 2014, employment growth for highly skilled workers increased by 5 percentage points (to 3.8 million workers), while that for semi-skilled and low-skilled workers decreased by 1 (to 7 million workers) and 4 (to 4.3 million

¹³ Bhorat, Hirsch, Kanbur, and Ncube, 2013.

workers) percentage points, respectively. This is a more than two-fold growth rate for skilled workers, which is about 38 percentage points higher than the growth rate for all workers¹⁴.

In the past, manufacturing has been a low-skill intensive sector, but in the recent years it has increasingly become capital intensive, leading to declining employment for the low-skilled. These workers have had limited chances for gaining employment in the fastest growing sectors such as the financial sector, which has mainly absorbed high-skilled workers. Given the country's inadequate supply of skilled workers, this has meant an increased skills premium, while a high level of unemployment remains.

Secondly, although exports increased in the post-1994 period, they have remained predominantly based on primary commodities, and manufacturing processes have consistently been capital-intensive. The former has meant that the economy has remained dependent on – and therefore vulnerable to changes in – commodity prices, which have been on the decline in the recent past. The latter has led to declining employment levels in the sector during a time when the need for more jobs has been dire. Finally, the continued volatility of the Rand has not been without consequences. In the past, the currency's appreciation has yielded lower exports, leading to the presence of Dutch disease effects, however, in the last few years, its depreciation has been good for exports.

Lastly, in the past a country's level of industrialisation and level of manufacturing for exports was its main driver of economic growth. Currently, this trend is changing and the service sector is increasingly playing an important role. The importance of the service sector in South Africa is growing, as it accounts for almost two-thirds of both GDP and employment¹⁵. South Africa, particularly when compared with other sub-Saharan countries, appears to have structurally transformed by surpassing the traditional process of industrialising, achieving large-scale production and becoming a consumer driven economy. However, as this discussion shows, the economy is still undergoing structural transformation – whilst also facing a number of economic constraints.

3. Constraints on Economic Growth

The preceding discussion points to three overarching barriers to economic growth: infrastructural investment, skills and education development, and public service delivery. These issues also prominently feature in the economic growth constraints outlined in AsgiSA (RSA, 2007). Although there have been concerns that the government has made too many policies that have, in some instances, been lacking in focus, one cannot discount the fact that these policies have been instrumental in changing the structure of the economy as is evident from the previous discussion. In this section, we briefly analyse the constraints to economic growth, mainly focusing on the microeconomic and structural reforms in areas that are related to the water sector.

According to the National Development Plan (NDP), South Africa's economy needs structural changes in order to reduce the high levels of unemployment, poverty, and inequality. South

¹⁴ Statistics South Africa, 2014.

¹⁵ Bhorat *et al.*, 2016.

Africa's plan to diversify its economy from a resource reliant economy towards industries producing household goods and services, has been restrained by domestic rigidities, such as high broadband costs, shortages in skills and electricity, and under par levels of competition in labour and product markets¹⁶. Although the different government strategies discussed above outline economic constraints relevant to the time under consideration, we focus our discussion on the three common constraints: infrastructural investment, education and skills development, and public service delivery.

I. Infrastructural Investment

At the end of apartheid, public sector investment in infrastructure had declined significantly. Although the post-apartheid government has consistently featured infrastructural investment in its policies, failing infrastructure remains a development problem that affects most economic sectors. Investment in any sector is dependent on the level of domestic saving, and/or the ability to attract foreign direct investment (FDI). Reliance on domestic saving is preferred since it is cheaper to obtain, however FDI, although expensive, has an appeal in that it can boost economic growth and create employment when accompanied by transfer of skills and knowledge. Currently, South Africa's low saving rate constrains investment, and as a consequence, the economy cannot adequately finance investment-driven growth. For instance, in the first quarter of 2016, gross saving as a percentage of GDP was 15 per cent¹⁷ – a marginal decline from 16 per cent in 2002¹⁸. This is half the 2009 average for developing countries (including China), which was at 32 per cent as a percentage of GDP (World Bank, 2013). The economy is therefore reliant on foreign investment; however, its ability to attract FDI has been poor, which has largely been blamed on unfavourable business laws and political uncertainties, among other reasons. Although the level of FDI in South Africa is expected to remain low in the foreseeable future, in 2016 it increased by 38 per cent¹⁹. In addition to this, at the end of 2015, the country's net foreign investment position increased to 17.8 per cent of the annualised GDP, from 2.8 per cent at the end of September³. Currently, this increase is largely buoyed by investment in the telecommunications sector, and private and public investment in infrastructure projects. There are plans to invest in infrastructure in the water sector as indicated in the 2016 budget, where the government is set to spend R102 billion on water resources and bulk infrastructure, and also plans to spend R865.4 billion on public sector infrastructure over the medium term¹⁶.

The need for either new, or an upgrade of existing, infrastructure in the water sector has been an ongoing one. The extension of water services to all post-1994, required large capital investment. Major investments were made in the 1970s and 1980s, but this did not meet the country's needs at the time, and therefore left a backlog. This backlog has been widened by the need to extend service delivery to a larger population and economy. The capital investment demands have been further increased by a growing maintenance backlog, which will require about R4 billion per annum, for decades to come (Department of Water and

¹⁶ Republic of South Africa, 2016.

¹⁷ South African Reserve Bank, 2016.

¹⁸ South African Reserve Bank, 2002.

¹⁹ UNCTAD, 2017.

Sanitation, 2009). Unfortunately, the Water Service Institutions have mainly focused on the development of new infrastructure at the expense of management of existing infrastructure **Error! Bookmark not defined..**

In recognition of the continued misalignment of infrastructural needs by the different sectors, the need for coordination of the different funds provided for infrastructure, and the need to better deal with the backlog, the Municipal Infrastructure Grant was set up. Its mandate is, however, limited to the upgrade and building of new infrastructure for provision of basic level services for the poor. For meaningful outcomes, it is important that the increased investment in infrastructure be accompanied by appropriate development of water institutions. Good and efficient management of the water infrastructure is more likely to support growth of the sector.

II. Public service delivery

Various policies and legislations on water services have been developed and implemented since 1994. Over time, the responsibility of infrastructural development and water service delivery has been transferred to the local governments, with the aim of improving service delivery. Unfortunately, the lack of – or inadequate – service delivery has remained a persistent problem across the country. In addition to this, the sector faces financial constraints (mainly in eliminating the backlog that exist in most municipalities). For some municipalities the financial constraints have been just too big, to the extent that they have been unable to implement some national policies such as free basic services. For instance, in 2015, only 57 per cent (159 out of 278) of municipalities had implemented the free water service, and only 54 per cent had free sewerage and sanitation²⁵. This lack of service delivery has been a driver of protests, which between 2004 and 2009 had an eightfold increase, from only 10 protests²⁰. Recent media narrative indicates that these service delivery protests have become more frequent²¹.

Water service delivery in post-apartheid South Africa has improved; access to water has increased from 59 per cent in 1994,²² to 89.4 per cent in 2015²³. However, there are millions of people, particularly in rural areas, who are yet to have access to clean drinking water. Structural issues, mainly emanating from the conflicting roles played by various government organs and the poor business models adopted in the delivery of water services, have contributed to this shortfall. For instance, although it is the responsibility of municipalities to supply water and maintain the infrastructure, they are dependent on the Department of Water and Forestry (DWAFF) and water boards for water supply²⁴. But, these water boards are decentralised, and in addition, municipal finance and intergovernmental fiscal issues exacerbate the delivery problem – particularly when coupled with the lack of clarity on the

²⁰ Alexander, 2010.

²¹ <https://africacheck.org/reports/have-protests-in-south-africa-nearly-doubled-since-2010/>

²² Republic of South Africa, 2011b.

²³ Statistics South Africa, 2015b.

²⁴ Chetty, and Luiz, 2014.

powers and functions of local government⁸. This obscurity directly affects the upgrading and installation of new infrastructure, and this in return affects the growth rate of the sector.

III. Education and Skills Development

South Africa is still reeling from the effects of the apartheid imposed *Bantu* education system. The restrictions on the type and level of skills that the majority of the population could acquire, has meant that a significant proportion of the adult population is either unskilled, or at best, semi-skilled. At independence, through the RDP, the state set out to break down the barriers to entry that were established in apartheid years, by providing equal opportunities to all South Africans. Over time, it has made deliberate efforts to integrate education and training systems. In recognition of the need to train this disadvantaged population, the RDP set out to create industry-based education and training. This, however, does not seem to have worked, since most industries still rely on tertiary learning institutions for new recruits, and unemployment remains high amongst the majority of those with low skills – regardless of their age. As it stands, the country is yet to be able to attain a critical mass of skilled individuals in the population, which has led to the high skills shortage, particularly in technical areas.

According to the DWA (2009), the water management sector skills shortages are mainly in engineering, science, technical, and artisanal areas. Regarding the general skills shortage, the DWA attributes this to competition for skilled personnel from other sectors. For instance, as of 2015, there were 1305 vacant managerial positions at the local government level; a decline from the 1785 positions in 2014²⁵. This is a good indication of the inadequate supply of skilled workers. Since 2007, the department has been trying to bridge the skill gap by offering engineering and technical support, through the establishment of a Water Sector Support Coordinating Unit (WSSCU), and programmes such as the DBSA Siyenza Manje programme, the SAICE/SABTACO deployment programme (known as ENERGYS – Engineers Now to Ensure Roll-out by Growing Young Skills), and the Masenzani Management Support Contract. However, a lack of skilled contractors to render services remains a major challenge to the maintenance and expansion of water provision infrastructure.

4. Role of Water in Economic growth

I. Water as an input

Water is a significant factor of production in most economic activities. The fact that South Africa is a water scarce country makes this input even more valuable, and particularly so considering the expected growth in demand for more water with the planned increase in economic growth. The economic valuation of water is therefore indispensable in determining the role of water in South Africa's economic growth. As discussed above, the contribution of the water sector to GDP has marginally increased but it has remained low – making the sector the least important in terms of GDP share. This GDP indicator, however, does not paint the full picture of the contributions that water makes to the various sectors, particularly in value addition sense, and hence its role in the economic growth. Here we explore, albeit briefly, the

²⁵ Statistics South Africa, 2016b.

indirect contribution of water to the economy via different sectors. Table 3 gives the share of water use and the resulting output, by sector.

The first panel of the table displays the changes in use between 1991 and 2012. Based on earlier findings (Kohler, 2016) we infer that the agricultural sector is the most intensive user of water, and has consistently consumed the largest share – averaging at about 80 per cent annually. It is followed by the manufacturing sector at an average of 11 per cent, while commerce and mining are the least users. Interesting changes in use can be observed in the mining and commerce sectors. In the period considered, the share in use in the mining industry almost halved, while it almost doubled in commerce. This is in line with the structural economic changes discussed above, that indicate the increased importance of the commerce sector while the mining sector has been on the decline.

Table 3: Share of Water Use Intensity per South African Economic Activity, 1991-2012

Sector	1991	1997	2000	2012
Share by use (%)				
Agriculture	81.49	82.44	82.07	79.21
Mining	4.09	3.54	3.10	2.57
Industry	11.11	10.68	10.96	12.14
Commerce	3.30	3.34	3.87	6.07
Share by output (%)				
Agriculture	3.45	3.15	2.81	3.58
Mining	9.13	7.33	4.85	7.79
Industry	39.36	40.49	36.44	40.69
Commerce	48.06	49.03	55.90	47.93

Author's own calculation from data compiled by Kohler (2016).

Note: The share by use is calculated from the volume of water used in m³, and the share by output is calculated from the Rand value of output produced.

A contrasting picture is shown in the second panel, where the commerce sector is leading year-on-year, while agriculture is lagging. The two panels show that agriculture has remained more water-use intensive, and its productivity relative to the water used has remained low. It is therefore the least productive sector in terms of value addition in relation to water – hence, an inefficient user of water. Commerce, on the other hand, has consistently been the most productive, in spite of its low water use. According to DWA (2009), commercial agriculture receives almost two-thirds of the water allocated to agriculture, yet it has been exempt from paying certain water charges. In addition, commercial agriculture is not charged with the maintenance of state-owned irrigation infrastructure, which means that the water sector incurs expenses without comprehensive means to recover them or even earn revenue. The fact that there is high water use in low productive sectors implies that, in terms of value for use, the value of water in economic growth can potentially be understated. Further, from this simple analysis, one could infer that there is a strong need for a water allocation system that would allow for greater socio-economic value per volume of water allocated, a point that is well discussed in Kohler (2016).

II. Contribution of Water to the Growth Trap

South Africa's sustained low economic growth has been characterised as a middle-income country growth trap⁴. This is a resulting consequence of the various constraints on the economy, some of which are discussed above. This growth trap is indicated by low investment and productivity, high unemployment, and rising inequality. Structural reforms that have included increased investment in infrastructure, increased spending on education, income redistribution mainly via social grants, and policies fostering inclusive growth, are yet to bear fruit. Focusing on employment, poverty, and inequality, we briefly discuss the contribution of water to this growth trap.

a. Water's Role in Creating Employment

In 1994, economic growth led to an increased demand for a more skilled labour force. Before this, in the apartheid-era, the economy's dominant sectors – agriculture and mining – predominantly relied on unskilled labour. Bhorat *et al.* (2014) argue that this reliance went on for far too long for it to have continued enhancing growth, since productivity had declined. In the post-apartheid period, in order for these workers to be productively absorbed into the economy, they needed to adapt and acquire skills. This of course, was in addition to the requirement that the economy grew at a rate high enough to significantly create jobs. Yet demand for workers resulting from the structural changes has been in favour of the skilled labour force, and economic growth has been sluggish, leading to persistently high unemployment levels.

As indicated in Table 4, the unemployment rate by narrow definition between 1994 and 2014 grew by more than 100 per cent – an increase of 3 percentage points. Further, the rate of unemployment by either definition – narrow and expanded – grew at a higher rate than employment did. A dissection of employment by skills indicates that employment for skilled workers grew at a significantly higher rate, reaching 107 per cent, and the share of these skilled workers in the economy also increased by almost 5 percentage points. On the other hand, the proportion of semi-skilled and low-skilled workers declined, and although their numbers in employment grew, it was at a low rate when compared with that of skilled workers. These statistics point to declining employment opportunities for the semi-skilled and low-skilled; these workers therefore make up the bulk of the unemployed, and are increasingly more likely to face unemployment.

Table 4: Employment by skills and Unemployment share, 1994-2014

	Share	1994	2014	Growth rate
Employment:	Skilled	1 831	3 801	107.59
	Semi-skilled	4 184	6 957	66.28
	Low-skilled	2 882	4 296	49.06
	Total ('000)	8 896	15 054	69.20
Unemployment	(narrow)	22	25	103.4
Unemployment	(expanded)	35	35	73.3

Source: Compile from StatsSA (2014)

The water sector, as already noted above, has not been a big player in its contribution to the growth of the economy. Similarly, its employment numbers have been low relative to the economy. Table 5 presents the employment numbers and the share of employment in the water sector, relative to the economy, between 2006 and 2013. From the table, it is evident that the number of people employed in the water sector has marginally increased. However, the share of employment has been decreasing, and has consistently been below 1 per cent.

Table 5: Employment in the water sector, 2006-2013

Employment	2006	2010	2013
Water sector	9 816	11 326	11936
South Africa (in millions)	13.601	18.352	19.752
Share of employment in water sector	0.072	0.062	0.060

Author's own calculation from StatsSA data various issues.

As we argue in the previous section, simply considering the jobs directly created in the water sector is unlikely to give an accurate picture of the role played by the sector in the economy. Therefore, an analysis of jobs created by the sector directly, and indirectly in other sectors, is necessary in order to get a better picture of the role it plays in job creation.

Agriculture for instance, being the most water intensive sector, indirectly creates more jobs. According to Nieuwoudt, Backeberg and Du Plessis (2004), although agriculture directly creates fewer jobs per m³ of water used than most sectors, its outputs directly and indirectly create more jobs, and similarly, investment in the sector, particularly in irrigated agriculture, creates more jobs than other sectors.

Throughout the post-apartheid era, the agricultural sector has remained the largest water user by a huge margin, as indicated in Table 3 above. Its share of GDP, as is shown in Table 1 and Table 6, has been persistently low, and declining. In terms of use the trade and services sector follows at a distant second, but this sector has the highest share in contribution to the GDP (followed by manufacturing and mining). In terms of productivity therefore, the trade and services sector is the most productive, while agriculture is the least productive. Overall, from the table, we show that the total amount of water used in the economy was similar: 12 523 m³ in 1995, and 12 797 m³ in 2000. But, the output increased from R 500 352 million to R838 218 million, which is a significantly higher increase. This is an indication that in 2000, water was used more efficiently across all sectors. Further, columns 5 and 6 indicate an increase in the value of output per m³ of water used, across all sectors.

Table 6: Value added and employment indicators of water use, 1995-2000

Sector	% of water		% of GDP		GDP/m ³ (R)		Employment/000 m ³	
	1995	2000	1995	2000	1995	2000	1995	2000
Agriculture	80.5	67	3.9	3	2	3	0.14	0.13
Power generation	2.6	2	3.1	2	55	65	0.31	0.26
Mining	3.9	3	7	8	84	163	1.08	1.23
Manufacturing	5.8	5	21.6	19	174	232	2.34	2.14
Trade and services	7.2	8	64.5	67	421	654	8.13	8.17
Total	100	100	100	100	47	77	0.88	0.94

Source: compiled from Statistics South Africa (2006)

Notes: In 2000, 15 per cent of total water usage was allocated to the Domestic sector. In subsequent years, this data was missing which makes comparison difficult.

The last two columns of Table 6 present the number of jobs created for every 1000 m³ of water used. The agricultural sector has the lowest employment share. For instance, in 2000, for every one job created in agriculture, 63, 17 and 10 jobs were created in trade and services, manufacturing, and mining sectors, respectively. Similarly, agriculture underperformed all the other sectors by value output. In 2000, for every R1 generated by the agricultural sector, R218, R77 and R54 were generated in trade and services, manufacturing and mining sectors, respectively. From these statistics, one can infer that: First, the allocation of water has been inefficient in both output and share of employment, which is a likely indication that the role of water in the economy is undervalued. Second, the water sector indirectly plays a major role both in generating overall growth for the economy, and in creating employment.

b. The Role of Water in Reducing Poverty and Inequality

Before 1994, access to water was inequitable, with the majority of South Africans having limited or no access. Fortunately, this has changed significantly. Post-1994, there have been government efforts to ensure water is made accessible to all. For instance, in addition to the existing national subsidy, the Water for Growth and Development Framework (DWAF, 2009) proposed that at least 50 litres per day of water be provided for free, to poor and vulnerable households. In 2015, the proportion of household consumer recipients of the free basic water marginally decreased by 1.6 percentage points, from 38.3 per cent in 2014²⁵. The provision of this basic service, however, faces infrastructural and management challenges.

The extension of water and sanitation services to all South Africans has made significant strides, since by 2015, only about 11 per cent of the population had no access to tap water. As shown in Table 7, this is about a nine percentage point decrease. The proportion of the population covered by sanitation services has also increased, to about 80 per cent. This increase in access to water and sanitation services has meant that the inequality in access to water has reduced. More poor people have water and live in cleaner surroundings, and as a consequence, their welfare is more likely to have improved.

Table 7: Percentage of households with access to piped water, 1996-2015 Service

		1995	2002	2007	2012	2015
Piped water:	Access	80.4	84.9	89.5	90.8	89.4
	No access	19.6	15.1	10.5	9.2	10.6
Sanitation:	Access	No data	62.3	70.4	76.9	79.9
	No access	No data	37.7	29.6	23.1	20.1

Source: October Household Survey, 2015.

However, general access to water and sanitation services may not necessarily indicate that there are sufficient economic benefits to the poor. The socio-economic effects on the poor, of the projects undertaken in the extension of infrastructure to deliver these services, should be given adequate consideration. For inclusive economic growth in the water sector to be realised in such a manner that it effectively contributes to poverty reduction, investment in infrastructure needs to be accompanied by investment in the development of the involved water institutions; and it should pay attention to the needs of the poor and the marginalised. The strengthening and coordination of these institutions would ensure minimal wastage of scarce resources and guarantee a continuity in the provision of water and sanitation services. The World Bank (2004) provides a typology of the interaction between water management and poverty, as presented in Figure 2. We use this typology to discuss the role that the water sector in South Africa can play in fighting poverty and reducing inequality. The four interventions given in this typology are very relevant for the South African economy, which is still at a stage where it needs to develop and manage both its water resources and the infrastructure, to deliver water to its population. In an attempt to relate these interventions to South Africa, we discuss the broad interventions – Type I and III – together, and the poverty-targeted interventions – Type II and IV – together.

		Nature of intervention	
		Broad	Poverty-targeted
Affecting water	Resource development and management	Type I Broad region wide water resource interventions For example, multipurpose river basin development and aquifer management	Type II Targeted water resource interventions For example, watershed management in degraded areas with poor farmers
	Service delivery	Type III Broad impact through water service delivery reforms For example, reform of water supply utilities and water user associations for irrigation management	Type IV Targeted improved water services For example, rural water supply and sanitation projects

Source: World Bank, 2004.

Figure 2: How water interventions affect poverty

The broad interventions, Type I and III, relate to the broad policies and investments that affect the development and management of water resources. The Type I intervention argues for

consideration of direct and indirect effects of major projects, and particularly infrastructural projects, on the poor. These projects, whether national or regional, have potential to improve the lives of the poor through, for instance, the development of their locality and job creation. Or, worsen the lives of the poor through, for instance, displacement or destruction of their environment. On average in most countries, these projects have been shown to generate economic activities that benefit the poor²⁶. A relevant example here is the Lesotho Highland Water Project. Phase I of the project saw socio-economic benefits being realised in both countries. For Lesotho, it was credited with increasing GDP by 2.5 percentage points, creating more than 16 000 jobs, and facilitating the building of amenities such as clinics and community halls, construction of roads and installation of electricity supply lines, among other benefits, which mainly affected the poor. Similarly, for South Africa, it delivered high quality water at lower treatment costs, also creating employment and facilitating the building of amenities, with the poor as beneficiaries²⁷. Phase II of the project is equally expected to generate more socio-economic benefits to communities in both countries. Often however, the implementation of such huge projects and in the rush to build, there is usually a lack of consideration of those directly affected by the projects – and particularly the specific human needs of the poor – which in the process, undermines the growth and poverty reduction potential of these projects²⁶.

Type III interventions call for the choice and implementation of major water investment policies to reduce the number of poor and vulnerable (for instance women). The participation of these groups in the implementation of the projects, could ultimately ensure that they benefit from the investment. Sometimes growth and opportunities for the poor can result from well-implemented water infrastructure and market-oriented reforms²⁶. Water tariff reform is an example of an avenue that the water sector could use to generate revenue, by intensive users charging more, while at the same time, offering more free basic water to those who already qualify. Additionally, more people in low-income households could possibly be covered by the free basic water system. Water charges and tariffs in South Africa are based on cost recovery principles; however, these costs have historically always been outstanding²⁸. The need to reform water tariffs has been evident for some time, and the DWAF (2009) concedes that the exclusion of some farmers from paying the return of assets (ROA) levies is a threat to the sector's ability to meet its costs of supplying water. They also concede that the prices charged to the agricultural sector are too low, particularly given its high and growing water use.

Interventions Type II and IV involve poverty-targeted policies and investments that affect the development and management of water resources. Type II interventions advocate for the implementation of water infrastructural projects to include water and land management activities that in addition to improving the quality of water and land, improve the livelihoods of the poor. Type IV interventions advocate for the poor to be included in domestic or irrigation water investment projects, since they are the most affected. For instance, when

²⁶ World Bank, 2004.

²⁷ LHWP http://www.lhda.org.ls/Phase1/?page_id=19

²⁸ Kohler, 2016.

informal and rural areas – where the majority of the population are poor – are inadequately supplied with water, the poor end up paying a lot for water. Access to water is lowest in rural South Africa, and the DWA (2009) recognizes that extension of water and sanitation services to the large but sparsely distributed populations of rural areas in KwaZulu-Natal, the Eastern Cape and Limpopo, have been slow. This is due to the high cost involved, and because the quality of water available to these populations may not be fit for drinking.

In similar strides, the anti-poverty strategy for South Africa (RSA, 2008) recognises that there have been persistent inequalities in service delivery to poor and vulnerable communities. RSA notes that, in 2005, half of poor households had no access to piped water, and historically disadvantaged communities still lagged behind in access to services. For instance, in areas where water was accessible, about 25 per cent of African households living in former *Bantustans* experienced disruption in services, while only 1 per cent of households in formerly White areas across the country experienced disruptions. Getting services to the poor in post-apartheid South Africa is hampered by: a coordination problem between the different agencies involved; increased demand in peri-urban areas due to a high influx of people from rural areas; the persistent apartheid spatial legacy which means townships (which are mainly inhabited by the poor) remain far from the economic centres, making it costly to lay infrastructure (while formerly White areas remain well serviced due to already established infrastructure); and a general lack of capacity by service providers, resulting in poor quality services (RSA, 2008).

5. Conclusion

This analysis evaluates how the structure of the South African economy has evolved in the post-apartheid era. Taking into consideration the various strategies that the government has adopted over time, it attempts to briefly evaluate how the water sector has been affected by these structural changes. It finds that the economic structure of the economy has changed significantly from a primary sector reliant economy, to a tertiary sector economy. Financial services emerges as the leading sector in the economy, both from an economic growth perspective and an employment growth perspective. This outcome offers prime opportunities for the water sector in terms of value addition, since financial services is a low intensity water user, but a high output and job generator. These qualities are instrumental to reducing poverty and inequality.

Overall, the evidence suggests that the South African economy is stuck in a low and sluggish growth trap; an indication that there are significant economic constraints acting as stumbling blocks to the country's economic growth. Our analysis evaluates three areas; infrastructural investment, public service delivery, and education and skills development; where economic constraints are most relevant to the water sector.

Finally, the analysis considers the role of water in economic growth, by valuing water as a factor of production. We then consider its contribution in the current growth trap scenario. A review of the role of the sector in employment reveals that while the water sector indirectly creates jobs, the inefficient allocation of water means that its potential to create more jobs is not fully exploited. Evidence suggests that the water sector has made great strides in providing the poor with water and sanitation services; hence, inequality in access has significantly reduced since 1994. However, the sector could further improve the welfare of the poor by ensuring that while it develops and extends its infrastructure and services to the uncovered areas, that economic benefits go to the poor as well.

6. References

Alexander, P. 2010. Rebellion of the poor: South Africa's service delivery protests – a preliminary analysis. *Review of African Political Economy*. 37:123, 25-40
<http://dx.doi.org/10.1080/03056241003637870>

Blignaut, J. and Van Heerden, J. 2009. The impact of water scarcity on economic development initiatives. *Water SA* Vol. 35(4). <http://www.scielo.org.za/pdf/wsa/v35n4/a06v35n4.pdf>

Bhorat, H., Hirsch, A., Kanbur, R. and Ncube, M. 2013. Economic policy in South Africa – Past, Present, and future. In. Bhorat, H., Hirsch, A., Kanbur, R., and Ncube, M. *The Oxford companion to the economics of South Africa*. Oxford: Oxford University Press, pg.1-25.

Bhorat, H., Cassim, A. and Hirsh, A. 2014. Policy co-ordination and growth traps in a middle-income country setting. The case of South Africa. WIDER working paper 2014/155.
<https://www.wider.unu.edu/sites/default/files/wp2014-155.pdf>

Bhorat, H., Steenkamp, F., Rooney, C., Kachingwe, N. and Lees, A. 2016. Industries without smokestacks: Implications for Africa's Industrialisation. Understanding and characterising the services sector in South Africa: An overview. WIDER Working Paper 2016/157. Helsinki: UNU-WIDER.

Bhorat, H., Ewinyu, A. and Monnakgotla, J. 2017. Poverty, inequality and nature of inclusive growth in post-apartheid South Africa. Development Policy Research Unit: Unpublished mimeo.

Chetty, S. and Luiz, J.M. 2014. The experience of private investment in South Africa water sector: The Mbombela concession. ERSA working paper 429.

Department of Water Affairs and Forestry. 2009. Water for growth and development framework. Version 7.
http://www.dwaf.gov.za/WFGD/documents/WFGD_Frameworkv7.pdf

Department of Water and Sanitation. 2009. Water for growth and development in South Africa. Version 6.

Faulkner, D., Loewald, C. and Makrelov, K. 2013. Achieving higher growth and employment: policy options for South Africa. South African Reserve Bank Working Paper No. 13/03.
<https://www.resbank.co.za/Lists/News%20and%20Publications/Attachments/5806/WP1303.pdf>

Kohler, M. 2016. Confronting South Africa's water challenge: a decomposition analysis of water intensity. SAEF Working Paper No.2016/01/01.

Nieuwoudt, W.L., Backeberg, G.R. and Du Plessis, H.M. 2004. The value of water in the South African economy: some implications. *Agrekon*, 43(2).

Republic of South Africa. 1994. The Reconstruction and Development Programme (RDP).

Republic of South Africa. 1996. Growth, Employment and Redistribution: A Macroeconomic Strategy. Accessed March 15, 2017.

<http://www.treasury.gov.za/publications/other/gear/chapters.pdf>

Republic of South Africa. 2007. Accelerated and shared growth initiative for South Africa (asgisa) Annual report. <http://www.gov.za/sites/www.gov.za/files/asgisa%202007.pdf>

Republic of South Africa. 2008. Towards an anti-poverty strategy for South Africa. A discussion document.

http://www.gov.za/sites/www.gov.za/files/Antipoverty%20strategy%20%28draft%20for%20public%20consultations%20October%202008%29_0.pdf

Republic of South Africa. 2011a. The new growth path: framework. Accessed on March 17, 2017. <http://www.economic.gov.za/communications/publications/new-growth-path-series>

Republic of South Africa. 2011b. 2011 Local government budget and expenditure review. National Treasury. RP103/2011.

Republic of South Africa. 2016a. Budget Review 2016, National Treasury.

Republic of South Africa, 2016b. Budget Review 2016. National Treasury, Pretoria.

<http://www.treasury.gov.za/documents/national%20budget/2016/review/FullReview.pdf>

Statistics South Africa. 2007. Gross domestic product. Statistical release P0441.

Statistics South Africa. 2008. Electricity, gas and water supply industry, 2006. Statistics South Africa, Pretoria.

Statistics South Africa. 2012a. Electricity, gas and water supply industry, 2010. Statistics South Africa, Pretoria.

Statistics South Africa. 2012b. Natural resource accounts. Updated water account for South Africa: 2000.

Statistics South Africa. 2014. Youth employment, unemployment, skills and economic growth 1994-2014. Pretoria: Statistics South Africa.

Statistics South Africa. 2015a. Electricity, gas and water supply industry, 2013. Statistics South Africa, Pretoria.

Statistics South Africa. 2015b. General household survey. Statistical release P0318.

Statistics South Africa. 2016a. Quarterly labour force survey trends. Statistics South Africa, Pretoria.

Statistics South Africa. 2016b. Non-financial census of municipalities for the year ended 30 June 2015.

South African Reserve Bank. 2002. Quarterly Bulletin, June 2002 No. 224.

South African Reserve Bank. 2016. Quarterly Bulletin, June 2016 No. 280.

UNCTAD. 2017. Global investment trend monitor. No. 25

http://unctad.org/en/PublicationsLibrary/webdiaeia2017d1_en.pdf

World Bank. 2004. Water resources sector strategy. Strategic direction for World Bank engagement. <http://siteresources.worldbank.org/INTINFNETWORK/Resources/water.pdf>

World Bank. 2013. Capital for the future: Saving and investment in an interdependent world <https://openknowledge.worldbank.org/handle/10986/13431>

World Bank. 2014. South Africa Economic Update. Fiscal Policy and Redistribution in an unequal society. The World Bank Group. Volume 6.

<http://documents.worldbank.org/curated/en/933231468101334970/pdf/921670WPOP131400SAEU60for0web01029b.pdf>

Vink, N. and Van Rooyen, J. 2009. The economic performance of agriculture in South Africa since 1994: implications for food security. Development Bank of South Africa. Working paper No.17.

<http://www.dbsa.org/EN/About-Us/Publications/Documents/DPD%20No17.%20The%20economic%20performance%20of%20agriculture%20in%20South%20Africa%20since%201994-%20Implications%20for%20food%20security.pdf>