



OXFAM
South Africa

A HARVEST OF DYSFUNCTION:

RETHINKING THE APPROACH TO DROUGHT,
ITS CAUSES AND IMPACTS IN SOUTH AFRICA



DRY TAP, MSINGA,
KWA-ZULU NATAL

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IMPACTS IN SOUTH AFRICA**

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Authors: Donna Hornby, Yves Vanderhaeghen, Dirk Versfeld and Mngqobi Ngubane.

Research assistance from: Philisiwe Mthimkulu, Mpiteng Msimanga, Azwianewi Makhado, Rauri Alcock and Gugu Mbatha.

Research management and logistical support: Ronald Wesso and Tanaka Nazare

Cover Photo: In Munzhedzi field, Limpopo

Design & Layout: Baynham Goredema

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**“ WE’RE GOING
TO END UP
EATING TREES
AT THIS RATE**

**... WE’RE NO LONGER BUYING 10KG OF SUGAR,
WE BUY THE 2KG BAG NOW. AND WE CAN’T
ALWAYS AFFORD TO BUY FLOUR OR BREAD
EITHER – IT’S JUST TOO EXPENSIVE.**

MaNdebele, Msinga, KWAZULU-NATAL

FOREWORD



For the last three years, Southern Africa has been ravaged by the 2015-2016 El Niño induced drought resulting in the worst drought in the region in 35 years. The drought has robbed millions of people of their livelihoods, exacerbated vulnerabilities and pushed households and entire communities deeper into poverty. Mozambique, Malawi, Zimbabwe, and to a lesser extent Zambia and South Africa, were among the worst affected. Oxfam has led on the ground interventions in some countries across the region. In supporting the worst affected countries, we have realised the need for urgency, deliberate and proactive planning, and effective governance during and after the worst phases of droughts. For Southern Africa, the worst is not over, and this report builds on the initiatives of Oxfam in the region to push for a more effective approach to managing what is called “drought”.

Oxfam South Africa is a new organisation, the first African affiliate of the Oxfam International global network which works in more than 90 countries to mobilise the power of people against poverty and injustice. Our first year of programming with communities coincided with the 2015-2016 El Niño which led to the worst phase of the recent droughts. It soon became clear to us that the struggle to get governments and other power holders to mobilize appropriate responses to the El Niño related drought had to occupy a central place in the fight against poverty and inequality in South Africa.

A lot has been said about the drought in South Africa. But a close analysis of its impacts and responses reveals that the poor were largely absent from the drought discourse, media reporting and to a large extent, “relief” interventions. As this report points out – essentially, interventions to assist poor people affected by drought must start with how drought itself is defined and understood. This includes how media, government, academics, civil society, business and affected communities themselves view drought, as well as its causes and effects. In this redefinition, the voices and actions of poor people, who often make up most of the affected, should be given proper recognition.

The title, “A harvest of dysfunction” draws attention to the fact that the impacts of the drought are not merely caused by reduced rainfall. Between the lower than expected rainfall on the one hand, and the thirst, hunger, unemployment, loss of assets, sexist discrimination and wider gendered differential impacts experienced by Black, poor communities on the other, there stands the dysfunctional relationships, institutions, inadequate policies and practices of the political and economic system. In other words, in a different system, not characterised by compromised democracy, inadequate public services, and corporate dominance of the food and water systems, the suffering of poor Black women recorded here as part of the drought picture, could be avoided.

As Oxfam South Africa, it is our assertion that there are many lessons to learn from this drought. The report is thus an invitation into a wider, broad-based conversation about an approach to understanding drought and its solutions. A conversation that says, in the context of climate change, these kinds of droughts may become the norm rather than a “35 year” exception. Therefore, how do we plan now, for a future that will likely throw up more climatic and other challenges at the most vulnerable people and societies? What is the role of government, communities and all others?



Sipho Mthathi
EXECUTIVE DIRECTOR
Oxfam South Africa



**DAVID'S SWEET
POTATO FIELD,
LIMPOPO**

EXECUTIVE SUMMARY

South Africa has been experiencing its most severe drought in over 35 years. More than half of the population have experienced water shortages or supply interruptions, while rising food prices and income insecurity are making hunger a daily reality for a growing number of families. This report argues that the devastation caused by the current drought is not simply a consequence of poor rainfall and the strongest El Niño on record; it is a harvest of dysfunction, arising from South Africa's failure to address structural vulnerabilities. It is crucial that lessons from this drought are learnt – both to develop more effective responses to the immediate crisis, and to put the country on a more equitable and sustainable path.

Food-price escalations – resulting from an unregulated market and compounded by drought-induced supply constraints – are having a devastating impact on vulnerable people. Women are particularly affected; they are compelled to work ever harder to provide their families with the food and water they need to live healthy, productive and dignified lives. The country's food staple, white maize, is at the mercy of speculative and financial dynamics that extend beyond South Africa, placing the entire region's food security at constant risk.

References by government officials and politicians to drought as a 'God-given' event – and their palpable relief that rain has now fallen in parts of the country – create the illusion that South Africa has survived the crisis and can put the problems of drought behind it. This denies the reality of severe drought as a slow-onset disaster that systematically strips away layers of resilience, resulting in poverty, insecurity and hunger for growing numbers of people.

The drought has exposed critical fault lines in South Africa – including the inequalities in income and access to land and water which exacerbate the drought's impact. These weaknesses require urgent attention if the current and future combinations of recurrent droughts, stronger El Niño effects and rising temperatures as a result of climate change are to be managed sustainably.

Yet to date, the government's responses to the drought have been slow, sporadic and badly targeted. Despite the range and extent of impacts across society, it has not declared a national emergency. By defining the drought in the narrowest terms – i.e. as a single event caused by low rainfall – the government response is limited, overlooks those people and groups who most need support, and misses a crucial opportunity to address the structural problems that the drought has laid bare. As the effects of climate change continue to unfold, it is an opportunity that South Africa and the wider region can't afford to miss.

While equitable redistribution of water for multiple purposes is a social and political imperative, overall national consumption of water must be reduced in the face of climate change and demographic pressures. The drought also makes clear the need to rethink key agrarian issues – and to balance water use and its conservation with efficient food production, and ensuring the availability of sufficient, nutritious, affordable food. These are policy challenges in 'normal' times. As recurrent drought becomes 'the new normal', these challenges will escalate if they are not effectively confronted now.

Key findings

This research focused on more vulnerable groups of people, in particular farm workers, small farmers and families who are heavily dependent on social grants to secure their livelihoods. With respect to these groups, our research finds that:

A narrow definition of drought limits the range of necessary relief.

The official and popular definitions of drought in terms of reduced rainfall are too narrow to describe the spread and severity of its impacts, and perpetuate an understanding of drought as a singular event rather than as an extended, multi-factor process. Most importantly, this fails to take into account the social and political dimensions of drought. The effect of such narrow definitions is to limit the range of necessary relief-related interventions.

Poor governance of the water resource has in key respects created the current crisis.

The drought has exposed hazardous shortcomings in the planning and management of the country's water resource. South Africa is a water-scarce country, already subject to recurrent droughts, and unless urgent action is taken faces the prospect that water supplies in more and more areas will run out. The challenge is that reduced water consumption and recycling need to happen at the same time as redressive redistribution to extend water services to those who have historically been deprived of them.

Drought combined with unregulated food markets has resulted in food inflation that pushes ever-increasing numbers of people into acute hunger, creating a national and regional crisis.

The most extensive, national impact of the drought has been on food prices and the capacity of low-income households to purchase sufficient quantities of nutritious food for their families. Food inflation has drawn more families into a crisis of hunger, and low-income households have begun to substitute protein-rich foods with flavoured starches.

Drought exacerbates existing structural dynamics in agriculture, making it necessary to urgently rethink the sector.

The drought greatly exacerbates trends in agriculture that favour large-scale producers over smaller farmers and labourers, including the concentration of landholdings and integration of large commercial producers in input and output markets. These dynamics drive social inequality. The combined effects of recurrent droughts, water scarcity and climate change suggest that it is time to rethink agriculture and its role in South Africa's economy and food system.

RECOMMENDATIONS

Redefine drought to enable an appropriate response

The drought is not simply an agricultural disaster; it is, more importantly, a social disaster in terms of its universal impact of food-price escalations. Therefore:

A national disaster should be declared.

A universal disaster grant should come into immediate effect in recognition of the impact of the drought on food prices and the costs of securing water. A universal grant would be relatively simple and cost-effective to implement, given that South Africa already has an extensive system of social grant administration.

'Drought' should be redefined to ensure greater understanding of its causes and its ramifications across society, ensuring a long-term, equitable response.

Ensure the equitable and sustainable redistribution of water

- State governance of the public and private sectors is critical for a sustainable water system and the fair distribution of water for human and ecological needs. This requires long-term planning, with limits set to growth based on the water resource, and careful monitoring of climate change and relevant adaptive planning. Therefore:
- Extended demand and rightful share should be met through recycling, tightened restrictions on the use of potable water, prioritisation and careful management of groundwater to supplement surface water use, domestic harvesting, and soil moisture maintenance practices.
- The state roll-out of rainwater tanks should be extended to all low-income households, with reserve back-ups in the form of community reservoirs and community-managed boreholes to catch and store rainwater.
- Water management policy implementation should focus on water conservation and water-demand management, including in the distribution system, urban and agricultural uses, and catchment management, as well as tighter restrictions on users as the norm.

- Maintenance of existing water storage, provisioning and treatment facilities must be reprioritised to address the recent maintenance neglect.
- Public investment decisions should be based on water allocation assessments and the real and full costs of water consumption and pollution.
- Penalties should be applied for wasteful water use and pollution, and incentives given for the development of domestic, industrial and agricultural recycling practices.
- Controlled allocations of water for human life (drinking, cooking and cleaning), household food gardens, and non-profit small-livestock farming systems (poultry, goats and sheep) should be free.
- Consumption-linked charges should be imposed on higher-use households (e.g. for leisure uses, car washing, garden watering, use of washing machines and dishwashers).
- Full costs of water should be charged for profit-making: agriculture and industry.
- A 'sin tax' could be extended to certain middle-class consumption goods which use high amounts of water in production (e.g. beef, coffee and chocolate).

Ensure all South Africans can access sufficient, affordable, nutritious food

Strategies to reduce the impact of drought on the cost of food across the country and the region involve both short- and longer-term interventions. Amongst these, food policy should prioritise the price of the white maize staple, both for South Africans and the region. Therefore:

- An emergency universal grant, pegged at inflation on low-income household nutritional food baskets, should be provided. Alternatively, all social grants should be increased by food-inflation rates on low-income households. The availability and requirements for accessing the Social Relief for Emergency Grant should be widely publicised.
- Mechanisms for stabilising the price of white maize need to be investigated, including delinking white maize from market dynamics through input subsidies, state-provided crop insurance schemes, milling co-operatives (possibly state-owned enterprises), floor-price ceilings and state purchase guarantees.¹
- Indebted farms growing white maize should be redistributed to small and emerging commercial farmers, and appropriate support provided to enable productivity.

Rethink farming and agricultural relief

The agrarian structure is vulnerable to crises, including drought and political and economic crises. It is imperative that a new structure comes into being – one that supports a more equal society and can potentially regenerate the rural economy. Therefore:

- Immediate drought relief in the form of feed and fodder transfers should be directed at owners of small livestock (chickens and goats) rather than owners of cattle. That is, direct support should be given to a broader range of livestock owners, and aimed at livestock that require less support to keep alive (per unit) and meet the needs of a greater number of low-income consumers.
- Support to small-scale cattle farmers should be directed at restocking breeding cows once the risk of drought is over. Given guarantees of state support to do this, farmers should be persuaded to reduce herds and focus on keeping a smaller number of breeding stock alive.
- Land should be redistributed to small-scale and emerging commercial farmers, with appropriate technological and production support, including access to credit and produce markets, subsidised insurance and climate adaptation strategies.

The extension of irrigation to stimulate the rural economy, as proposed in the National Development Plan, should be subject to ongoing review.

- Bigger allocations of public funds should be made to develop and support climate-adapting and agro-ecologically resilient small-farming methods, which are less water-demanding and are geared to meeting multipurpose household farming systems.

¹ Since white maize is only routinely produced in Africa and Mexico, this option should not be subject to the volatility of global capital.

INTRODUCTION

INTRODUCTION

'I'm silenced by this drought ... Even goats have died. And we're hungry too. As for water – I don't know where to get it from anymore. We're thirsty, thirsty. In our fields, we planted and everything died until eventually we just stopped trying. Even our dam has dried now and our husbands are saying that if we want to plant, we'll finish the water that is for the livestock. Honestly, I don't know how we're going to survive this. We carry water in drums on our heads and the vegetables die anyway. And the price of mealie meal has gone up in a terrifying way. It's now R605 for 80kg – that's up from R350-R380. We're already going to sleep hungry.'

MaSkhakane, Msinga, KWAZULU-NATAL

'We don't seem to be planning the things we do. We function on a hit and miss basis, which is shambolic.'

Former president of South Africa, Kgalema Motlanthe (DAILY MAVERICK, 11 MARCH 2016)

South Africa has been experiencing its most severe drought in over 35 years in the aftermath of the strongest El Niño phenomenon on record. More than half of the population have experienced water shortages or supply interruptions, while escalating food prices mean more and more families are going hungry.

This report argues that the devastation caused by the current drought is not simply a consequence of poor rainfall and a strong El Niño in 2015/16; rather it is a harvest of the dysfunction arising from South Africa's failure to address structural vulnerabilities. The country's food staple, maize, is at the mercy of an unregulated market and speculative financial dynamics that place the entire region's food security at constant risk, while food-price escalations are pushing hunger even beyond the levels identified by Oxfam's *Hidden Hunger* report in 2014.

The government's responses to the drought have been slow, sporadic and badly targeted. The burden of this dysfunction falls mainly on those households with already precarious livelihoods, while stripping away the resilience of others. Women are compelled to work ever harder to provide their families with the food and water they need to live healthy, productive and dignified lives, and evidence shows they bear the brunt of diet-related diseases.

South Africa and the wider region simply cannot afford this dysfunction. South Africa's annual average rainfall dropped by over 200mm in 2015 to its lowest level since 1904 (Bureau for Food and Agricultural Policy – BFAP, 2016), providing a good indicator of what a future Sub-Saharan Africa will look like as the effects of climate change take hold (Wright *et al.*, 2015). 'Climate change is here now. We are drier... and people are moving off the land because it is no longer possible to farm it,' says researcher Stephen Greenberg, while a *Mail & Guardian* editorial states that 'Drought is the new normal,' (January 2016). The current drought, caused by El Niño and supercharged by climate change, is thus a vision of the future, exposing and exploiting vulnerabilities wherever they exist. It is these vulnerabilities that the South African and Southern African Development Community (SADC) governments must urgently address.

The consequences of the drought include:

- **Water scarcity:** 7.3 million households (33.8 million people) had experienced insecure access to drinking water at the start of the 2015 summer rainfall season.
- **Food-price rises:** Low-income household food inflation is expected to rise to 15-20% by the end of 2016, with resulting increases in nutrition-related diseases (PACSA, 2016).
- **Farm job losses:** Up to 175,000 farm workers are expected to lose their jobs between 2016 and 2018.
- **Farm indebtedness:** Increased commercial farm bankruptcies have led to a 45% increase in farm sales over 15 months (*News24*, 7 June 2016), as the current debt-to-asset ratio of 33% escalates as a result of production failures.
- **Agricultural restructuring:** There is an expectation that farm sizes will grow and 'bigger farmers and cluster groups will play more prominent roles in the production and supply of food' (J. Bornman, *News24*, 7 June 2016).



AGRICULTURE PROJECT ALONG THUKELA RIVER, KWA-ZULU NATAL

Despite the range and extent of these impacts, the government has not declared a national disaster; this happens only when the existing legislation is deemed inadequate to mobilise the interventions necessary to mitigate the impacts. The government has declared drought emergencies in eight provinces, excluding only Gauteng.¹ It has responded by setting up disaster response coordinating committees to provide livestock fodder relief, loans to provinces, Land Bank credit facilities and emergency water to afflicted communities, along with reprioritising budgets for water-access infrastructure and maintenance work.

This response is broadly consistent with the dominant discourses on drought, that have tended to emphasise its impacts on – and the financial vulnerability of – the agricultural economy (despite the fact that the sector as a whole does not necessarily require government support to recover from the effects of drought), and to consider drought as a consequence of weak water governance. Drought framed in this way is generally presented in terms of aggregated numerical data – quantified statistics, percentages and trends – shifting attention away from the humanitarian and social crisis. This social crisis is inherently political in nature: the historical structures of poverty, deprivation and unemployment continue to produce inequality today, which is exacerbated by current economic policies. It is clear that the longer-term impacts of the intersection of recurrent drought, climate change, water management and a collapsing rand are poorly understood.

This report focuses on how the drought impacts on the most vulnerable people and groups: the men, women and children who depend on household farming for their food and income, the food-insecure whose incomes are already stretched, and wage workers employed in the agricultural sector whose jobs may be at risk.

In seeking to identify and understand the impacts of the drought on vulnerable groups, and the drivers of these impacts, the research focuses on four factors:

¹ The first emergency was declared in North West province on 24 July 2015. As of June 2016, provincial disasters had been declared in eight provinces (Des Van Rooyen, Minister of Co-operative Governance and Traditional Affairs, cited in *News24*, 10 June, 2016). The Democratic Alliance's parliamentary motion to have the drought declared a national disaster was adopted for debate in May 2016.

-
- Definitions of drought and how they limit relief responses;
 - The water resource and its sustainable use and management;
 - National food-price increases; and
 - Agrarian dynamics.

The report is divided into sections exploring each of these factors, with a fifth section on conclusions and recommendations.

If a single finding could be made from this research, it would be that drought is a shock that lays bare the existing fault lines in society. Layer by layer, it strips away the resilience of those people and households who had little to begin with. As the full effects of the drought ripple through South Africa, there is both an urgent need – and a positive opportunity – to recalibrate state-social relations and to put the country on a more sustainable path. The first step in doing so is for the government to declare a national disaster and implement a universal disaster grant in response to the humanitarian crisis arising from escalating food prices.

Research methods

The research methods included a media review to supplement the standard literature review. Interviews were held individually and in groups with seasonal and permanent farm workers in Warden, Free State, with land-reform beneficiaries in Vleifontein, Limpopo, and with small and subsistence farmers in Msinga, KwaZulu-Natal. In total, 58 people were interviewed at community level (17 individually and the remainder in four focus groups), 20 people from a range of civil society organisations including universities (12 individually, the remainder in a focus group), and three government officials.²

² We asked many more government officials for interviews; however, there was little positive response.



THE NEED FOR A BROADER DEFINITION OF DROUGHT

THE NEED FOR A BROADER DEFINITION OF DROUGHT

'The drought comes into situations that already have a lot of challenges, and it makes these challenges even more difficult to overcome.'

Daniel Khoza, VLEIFONTEIN, LIMPOPO

'Disasters do not happen in a vacuum, but in communities where people stay.'

Des Van Rooyen, Minister of Co-operative Governance and Traditional Affairs, NEWS24, 10 JUNE 2016

'During a sitting of the Parliamentary Portfolio Committee on Agriculture, two ANC MPs wanted to know from officials of the Department of Water and Sanitation what a "drought" is.'

LANDBOUWEEKBLAD, 12 NOVEMBER 2015

What is a drought? It's a good question. The South Africa Weather Service observes: 'Drought is not easily defined and often depends on who you speak to.' And yet definition is important: it shapes how the impact of drought is understood, who is viewed as vulnerable, and how interventions are decided and resourced. Drought is thus not politically neutral. This section of the report considers the measures currently used to define drought, and how the media influences the dominant discourse – shaping (and limiting) how the drought is understood, and often leaving the most vulnerable groups out of the frame. It demonstrates the urgent need to broaden both the definition of drought and the discourse around it, to ensure an appropriate response to the current crisis.

DEFINING DROUGHT IN SOUTH AFRICA

In South Africa, a meteorological definition of drought describes how dry a particular area is in comparison to rainfall averages over a 30-year period for that area. A severe meteorological drought is where the rainfall is 75% of the average. Policy makers depend on *operational* definitions of drought, which provide criteria for determining the onset, severity and end of droughts in order to decide when to start implementing water conservation or drought-response measures.

The South African Weather Service, which decision makers rely on for information, uses a Standardised Precipitation Index (SPI) as recommended by the World Meteorological Organisation. The SPI determines the probability of rain occurring as compared to the rainfall climate in a specific location over a long-term period. A negative SPI value means a rainfall deficit, whereas a positive SPI value indicates rainfall surplus. The higher the negative value relative to 0, the greater the intensity of the drought. Thus SPI values of less than minus 2 indicate extremely dry conditions.

The advantages of the SPI are:

- Calculations only need rainfall data.
- Different climatic zones across regions can be compared (WU Man-chi, 2013).
- Assessments of the cumulative effects of rainfall deficits are possible.
- The severity of any one drought can be compared with that of other droughts.

Because the SPI can measure rainfall conditions over different timescales, it can alert decision makers to the shorter- and longer-term consequences of drought. SPI-3, for instance, measures rainfall conditions over three months, with negative values indicating impact on soil water and thus agricultural production. SPI-24, which measures rainfall over two years, can indicate prolonged drought that impacts on groundwater, stream flow and water storage (in dams and reservoirs).

However, a declaration of a national drought disaster is made in relation to the Disaster Management Act (2002). A declaration is necessary to coordinate government responses and to release funds allocated to other government priorities. In order to declare a disaster, government draws on the SPI information, amongst other sources, to determine whether the impacts of rainfall deficit conform to the legal definition of disaster, which includes the extent and severity of the event. A declaration may be made only if existing laws and contingency arrangements are judged inadequate for the government to deal effectively with the disaster (South African National Disaster Management Center, 2016: 10). Disasters are declared for three months at a time, and declarations can be renewed for a month at a time before the three-month lapse. In the current drought, the government has so far stated that a national disaster is not necessary since '... God has been kind and late rains did come'.

THE POLITICS OF DEFINING DROUGHT

In the South African context, drought is a slow-onset disaster; it is not simply an event involving diminished rainfall. Natural factors other than rainfall that affect the amount of available water include wind, heat and the capacity of soil to absorb water. Social factors include a range of human activities and choices related to land and water use, water storage and conservation, ecological management and human settlement patterns. Governance of water resources and their distribution, and planning for and responding to reduced rainfall, all affect the impacts of drought on people, agriculture and ecology. A drought disaster in the humanitarian sense is the result of a combination of these factors and processes.

A more general definition of drought is 'a water shortage for some activity, group, or environmental sector'. The impacts of drought in this sense result from the 'interplay between the natural event (less rainfall than expected) and the demand people place on water supply' (US National Drought Mitigation Center). Drought, El Niño events and climate change thus have social and political dimensions which are often disregarded by scientists and other technical assessors relying only on narrow SPI indicators.



Recent sociopolitical perspectives suggest that South Africa's 'water predicament is a symptom of a deeper crisis that ... can be attended to only through a fundamental shift in economic governance' (Fioramonti, 2015). Zimbabwe land expert Professor Ian Scoones (2016) argues that in Southern Africa 'politics and drought are intimately connected ... [and] responses require tackling the root causes of vulnerability, including inequality'. O'Brien *et al.* (2014) add that 'the concept of [climate] vulnerability depends on the scale of analysis... [along with] the underlying social and economic conditions that influence adaptive capacity'. The NGO, PACSA¹ (October 2015) suggests that a universal drought 'narrative' makes it difficult to analyse the differential impact on rising food prices given variations 'in on-farm conditions, location... and exposure to exchange rate fluctuations'.

¹ Pietermaritzburg Agency for Community Social Action.

The dimensions of drought

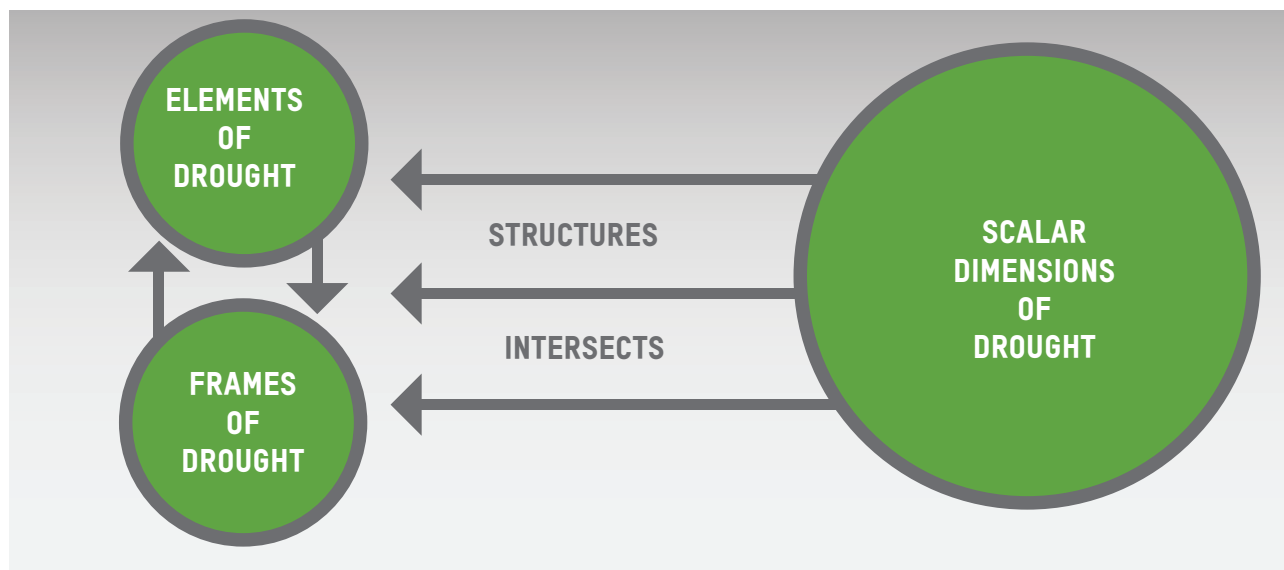
This report proposes taking a broad, sociopolitical perspective on drought that considers three different ‘dimensions’ of drought, as follows.

Firstly, the *elements* of drought are the physical or natural causes of water shortage and scarcity, and how this is managed. These include climate and weather (meteorology); surface and groundwater and its flows (hydrology); and water use and its governance. While humans cannot control rainfall, they can plan and manage a water resource, what it is used for, and who is entitled to use it.

Secondly, the *frames* of drought are the dominant discourses that shape how drought and its impacts are understood. These include: definitions of drought; the consensus on what the impacts are, who is vulnerable to them and in what way; and what mitigation, relief or emergency measures are deemed necessary and for whom. Determining how and why some lives and activities receive more attention and support than others during a crisis such as a drought is key to understanding how the responses are defined and funded. The media play a central role in framing drought and influencing the discourse (see section 2.3 – Media framing and discourses of drought, below).

Thirdly, *scalar* aspects of drought are how the above dimensions come together in a particular locality and intersect with its history, agro-ecology, rainfall pattern, hydrological resources, settlement pattern, local governance and economy. Assumptions that drought impacts on all areas, people and sectors in the same way leads to wasteful and ineffective responses to human crises.

Figure 1: The intersectionality of drought



MEDIA FRAMING AND DISCOURSES OF DROUGHT

This research included a media survey,¹ which found that the South African media (from early 2015 to mid-2016) tended to ‘frame’ the drought primarily as an agricultural event affecting farmers, while the dominant ‘discourses’ were about the economy and the governance of water resources.

This is important because framing and discourse influence how consensus is established on issues and shape the politics of drought. Framing is, simply put, a question of what is included in the frame of reporting, or what is visible, as well as what is not represented or is rendered invisible. It is ideological in that it draws on an already established understanding to create greater comprehension and feelings of sympathy (or otherwise). Discourses – what is said about the drought, how it is said

¹ The media selected for review were *Landbouweekblad*, *Business Day*, *Mail & Guardian* and *Daily Sun*. The period of study was October and November 2015, when the impact of drought was becoming clear and government interventions were initiated. The study continued to monitor drought-related news stories, and expanded to include *News24*, *TimesLive*, *10L*, *Daily Maverick* and social media, until the end of the research period in June 2016.

and by whom – help to consolidate this understanding or perception. The discursive construction of the drought determines how it is ‘known’, and how this is positioned in relation to structures of power and authority. It further determines who bears responsibility for action or inaction.

Thus, for example, when drought is spoken of as an ‘act of God’, as reported in the *Daily Sun*, this fuels the perception that there is no solution beyond ‘God’s will’ and that governance is a moot point. Similarly, commercial agriculture’s concern about the maize crop is embedded in an understanding of maize as the primary agent that provides national food security. The vulnerability of commercial agriculture is thus aligned to the vulnerability of those who are struggling to afford food. Attention is thus deflected away from commercial agriculture’s role in supporting the unregulated free markets and financial speculation on agricultural commodities that have contributed to rising food prices.

One of the key conclusions of this research is that treating drought simply in narrow terms of ‘rainfall’, ‘water’ or ‘dryness’ greatly oversimplifies the phenomenon and suggests that it is only rainfall that can provide relief and solutions. It is in precisely this limited manner, largely devoid of context, that the discourse of drought is carried out in the *Daily Sun*. Heat, dry taps and dead cattle express the full extent of the crisis, with no reference to food prices, maize shortages, agricultural production, El Niño or global warming.

Dominating the discourse

‘Agriculture’ and ‘economy’ are, together with ‘poor governance’, the dominant, integrally linked discourses of drought in *Landbouweekblad*, *Mail & Guardian* and *Business Day*. Agricultural production constitutes the central measure of the impact of the drought, and is shown to be under pressure from exchange rates, input costs, policy issues and government neglect. The sector’s appeals for drought aid which includes insurance subsidies and interest-free loans, are regularly repeated, suggesting that support to commercial farmers is the surest remedy. These appeals are articulated as benefiting not only the sector, but also jobs and the economy as a whole due to commercial agriculture’s extended value chains. These publications all argue that government should take the commercial agriculture sector and its needs more seriously.

Damage to agriculture is also argued to be central to rising food prices. However, while the lives of farmers are represented as multi-layered and subject to a complex range of factors, both global and domestic, those who face the burden of job losses or food-price increases are usually represented purely in terms of numbers (e.g. percentage increases) and categories (e.g. as ‘consumers’). The category of ‘consumer’ is elastic, and implies that spending is discretionary and the response to price increases is ‘belt-tightening’.

The discourse of ‘poor governance’ in relation to agriculture and the economy is also articulated in a way that shows these sectors to be vulnerable. This vulnerability extends to suburban and rural households and to large- and small-scale farmers, but while a complex picture emerges of the pressures and constraints on commercial farmers, again this is not the case for ‘households’, ‘consumers’ and precarious constituencies, which are not fully or regularly represented. Shack-dwellers (both rural and urban), subsistence farmers, farm workers and urban working-class homes are all excluded from the frame. Their survival strategies, and how these are altered and adapted as a direct result of drought impacts, are not presented or explained. The form that might be taken by short-term drought aid or longer-term structural reform to reduce the precariousness of these households is obscure.

The negative impact of framing

The effect of these inclusions and exclusions is to place the commercial farmer as the central figure in the drama of drought, ensuring that the commercial agricultural sector makes a strong claim on the public imagination. It limits understanding of drought to a meteorological event confined to some areas of the country, and under-emphasises the universal shock to household economies and food security, felt most catastrophically in poor households which have few buffers and no or limited livelihood alternatives.

As the Danish Red Cross notes in its *Analysis of legislation related to disaster risk reduction in South Africa* (Humby *et al.*, 2011), high levels of unemployment, a poor educational system and a high HIV/AIDS/TB disease-driven burden ‘compound the vulnerability of particular groups... their ability to anticipate, cope with, resist and recover from a natural threat. This in turn increases the risk that the probability of a natural hazard occurring and culminating in physical, financial and social losses will occur. The question of identifying those most vulnerable or most at risk, differentiating levels of vulnerability in a community, and finding appropriate frameworks, methods and data to explore and explain vulnerability is difficult.’

This is precisely the challenge the South African government has to address in its disaster management strategies. Redefining drought – and how it is framed and discussed – is an important step in addressing historical and ongoing burdens of poverty and inequality. Yet to date, swayed by the dominant media framing and political discourse, the South African government has viewed (and responded to) the impacts of this drought primarily in terms of the effects of reduced rainfall on agricultural production (and particularly on cattle and grain crops). Consequently, since late-summer rains have fallen in 2016 and South Africa has the logistical and financial capacity to import maize, the government sees no need to declare a national disaster. However, the relationship between rainfall and agricultural production is too narrow a definition of drought, as discussed above and expanded on over the following three sections. A definition of drought that factors in its broader causes and impacts would make the declaration of a national disaster a logical and necessary intervention. It would also suggest that government should consider appropriate interventions around food-price escalations, the inequitable distribution of the country's limited water resource, and the increasing concentration of agricultural land and production in the hands of fewer farmers and businesses.

The background consists of three diagonal stripes of color: a dark green stripe in the top-left corner, a light green stripe in the middle, and a light blue stripe in the bottom-right corner. The stripes meet at diagonal lines that run from the top-left towards the bottom-right.

THE GROWING RANKS OF THE HUNGRY

THE GROWING RANKS OF THE HUNGRY

'If only we could get enough mealie meal every day, then I could still eat, get dressed and go out, and no one would know I hadn't eaten properly.'

Pawulina Salepe, WARDEN, FREE STATE

Rising numbers of South Africans are going hungry because of the spiralling prices of staple foods. Families are changing their diets and eating patterns, and are sacrificing protein-rich foods for cheaper, less nutritious starches. While the whole population is affected, poor families are bearing the brunt of the food-price increases, as they spend the greatest proportion of their incomes on food. This section looks at the devastating effects of food-price inflation on low-income families; it highlights their increasing struggle to stretch meagre food supplies, and the impact of this on the nation's health. First, it considers the role of white maize, which – as both a critically important staple food, and a commodity subject to economic volatility and market speculation – has exposed a major weakness in the face of the drought.

THE CRITICAL ROLE (AND VULNERABILITY) OF MAIZE

'If during the drought we had had enough maize meal, it wouldn't have been as bad as it has been, because even if you have no food, you can always find morogo in the wild, and you can use salt and water to eat it with pap. So having mealie meal makes it less bad.'

Emily Matsheke, VLEIFONTEIN, LIMPOPO



The maize sector in South Africa essentially comprises two value chains, one for white maize and the other for yellow. There is some overlap of key players, particularly Grain SA, a voluntary association of grain producers which provides information on production, market prices and crop estimates. White maize is produced mainly for human consumption, with about 58% consumed locally and the surplus exported to SADC countries and sometimes Mexico (Grain SA). Yellow maize is produced as a livestock feed, with surplus exported mainly to the East (Japan and Taiwan in particular). Total yellow maize production now exceeds white maize production. Although the total volume of white and yellow maize produced has risen since the late 1980s, there have been seven years since 1992, mostly coinciding with drought or dry years, where the total volume equalled or was below the reduced 2016 harvest (Grain SA). It is generally under-emphasised that, due to recurrent droughts, South Africa has intermittent harvest shortfalls.

Falling harvests, rising prices

South Africa's maize production decreased 30% year-on-year in 2015 and is expected to decrease further by 27% year-on-year in 2016 as a direct result of two consecutive droughts. The 3.1 million tons of white maize, the food staple, is the lowest amount produced since the 1994/5 season. Since SADC countries import about 42% of South Africa's maize crop in normal years, the shortfall will have a regional impact on food supplies, with the greatest negative effect on those countries which are highly dependent on South African imports to meet national consumption, such as Botswana (over 80%), Zimbabwe (64%), Namibia (62%), Lesotho (52%) and Swaziland (42%) (Grain SA).

As a result of this reduced harvest, South Africa expects to import 1.1 million tons of white maize (as of March 2016 estimates by Grain SA, 2016) from Mexico, the only other routine white maize producer outside of Africa with an expected surplus. A number of African producers (Zambia, for instance) have closed exports of white maize in order to protect the crop for national consumption. The US produces white maize only on contract, but imports to South Africa are constrained by the different regulatory environment in terms of GMO seed (Van Zyl, pers. comm., 2016). There has thus been too little white maize to meet South Africa's basic food needs in 2016. This shortfall, combined with the deteriorating value of the rand and import parity dynamics, drove a 47% year-on-year increase in the spot price of yellow maize and a 93.3% increase in that of white maize in July 2016 (Agri SA, 2016), and is expected to result in an 11% inflationary increase across all foods from 2016 to 2017 (BFAP, 2016).

'The maize price increase is a huge problem. When I think that 12.5kg used to be R40 something and now it's over R100, it is causing real difficulties ... And while I am growing maize here on the farm, the heatwaves and lack of rain have affected the crop badly. It just burns in the ground. Look over there [he points to a scraggly maize field among macadamia trees – small, dry and sometimes dead plants, and rows with many gaps between plants]. In most years, that is a good maize field, but look at it now. The drought has destroyed it and it won't produce much this year.'

Sipho Baloyi, VLEIFONTEIN, LIMPOPO

The primary barrier to trade of white maize in the African region is a bio-safety trade regulation imposed to protect producers outside South Africa, by preventing contamination of local seed by the 80% genetically modified seed used by South African producers. However, the countries that impose this barrier tend to lift it in times of crisis (Sihlobo, pers. comm., 2016).

Although agents up and down the maize value chain are all affected (albeit differentially) by the reduced harvest, increased prices and rand devaluation, the highly concentrated nature of the maize value chain – with both input and output dominated by a small number of big companies – have made it susceptible to illegal activities that have put profits before human need. Key input supplies are seed and fertiliser. Seed is a complicated value chain in its own right, with globally dominant suppliers such as Monsanto, which controls 23% of the market. For fertiliser, three companies dominate 94% of South Africa's supply market, namely Kynock, Omnia and Profert – a supply stranglehold whose pricing practices came before the Competition Commission in 2009. On the output side, the National Association of Maize Millers lists nine members, seven of which are South African companies, including three – Pioneer Foods, Premier Foods and Foodcorp – that have all been found guilty by the Competition Board of bread-price collusion.

At the mercy of the markets

The current white maize prices are not simply the outcome of supply constraints arising from the 2014 drought; they are also the result of speculative hoarding and futures contracts. As a result of deregulation and market liberalisation, financial instruments replaced price controls for maize, the primary one being the South African Futures Exchange (SAFEX), which was established in 1988. This futures market allows maize (and other grain) farmers to hedge their risks in terms of prices, by buying a contract at a set future price to ensure against losses arising from collapsing prices. Hall (2009: 122) cites the Food Price Monitoring Committee's findings that the futures market 'contributed to price volatility and overshooting on the basis of perceptions, allowed large players to manipulate prices, was inaccessible to small producers and millers, and was likely to lead to concentration in the medium to long term'.

The impacts of drought must therefore be viewed in a context in which maize is both a commodity – subject to financial and economic volatilities shaped by national and global trade policies and markets – and a critically important staple food, both in South Africa and the continent. The supply shortfall as a result of drought, the dependence of the region on imports from South Africa, South Africa's deteriorating economic prospects and rand volatility, all reinforce each other to produce the prospects of a cataclysmic staple food crisis across South Africa, the region and the continent.

'WE'RE GOING TO END UP EATING TREES'

'We're going to end up eating trees at this rate. We'll just break the branches off and eat them, since even one cabbage is now R20 from the bakkie traders. We're no longer buying 10kg of sugar, we buy the 2kg bag now. And we can't always afford to buy flour or bread either – it's just too expensive.'

MaNdebele, MSINGA, KWAZULU-NATAL

Food-price escalations – resulting from an unregulated market and compounded by drought-induced supply constraints – are having a devastating impact on vulnerable people. In South Africa, access to food under 'normal' conditions is far from universal, and even when access is good, it is often to 'bad food', i.e. fatty, starchy or sugary food that is high in calories but has little nutritional value (Oxfam *Hidden Hunger* report, 2014).

While Stats SA's General Household Survey notes that in 2014, 13.1% of people had gone hungry because there was not enough food in the home (a decrease from 29.3% in 2002), its Household Food Insecurity Access Scale gauges that 26.2% of people and 22.5% of households had limited access to food. The higher figures reflect the number of people who have had to change their diets and eating patterns because they are no longer able to obtain what had previously been available or affordable.

'My money just runs out now. That is a big change from last year.'

MaMchunu Ziqubu, MSINGA, KWAZULU-NATAL

Some provinces are worse affected than others. In North West province, for example, which was the first province to be declared drought-stricken in 2015, 39.6% of households had inadequate or severely inadequate food access in 2014 – that is, long before the onset of the drought.

Access to food diminishes due to either availability or cost, or both. Given that all households (even those which grow some of their own food) purchase food in some measure, the cost of food is a good indicator of reduced access to food. Since some items are dropped entirely due to their cost, this also has an impact on the nutritional value of daily meals. The idea of a 'food basket' is used here to consider the items consumed by low-income households from month to month, enabling comparisons in terms of content, cost and nutritional value to be made over time.

The disproportionate impact of spiralling food prices

The BFAP (BFAP Policy Brief on the 2015/2016 Drought) notes that ‘the cost of the staple basket increased by approximately 19% from January 2015 to the corresponding month in 2016’, and that a further 10% increase over and above this is expected during the first quarter of 2016. It also notes that bread and cereals make up 24% of average total household food expenditure, and it is this component of the food basket that is most susceptible and quickest to respond to supply shocks caused by, for example, drought. However, this understates vulnerability, because in low-income households, staples make up a much higher percentage of the food basket, as indicated by key respondents in this study and by PACSA.

‘We struggle to have enough to eat. I try to ensure that we have enough for our well-being but it’s not always enough. That’s when I skimp on meals. I try to make sure that Baba (my husband) has his meal box for work and that the children have had enough to eat, and then I see what’s left for me. But often in the middle of the month we struggle, because that’s when we begin to run out. When that happens, I have to patch here and there to make meals, and then make the food stretch until the next money comes in. Food prices are definitely going up and this started happening with this drought. We get our mealie meal from the farmer who brings it to us. Last year, the price of an 80kg bag was R380, but now it’s gone up to R580. And I fear that next year it will go up even more because the farmers have planted so little this year.’

Rebecca Radebe, WARDEN, FREE STATE

Emphasising that a drought is not a single, clear-cut event, the BFAP concludes that ‘double-digit food inflation will be the order of the day’, and that if the slow-fuse impact of meat-price inflation is factored in, then there will be ‘food inflation pressures for a *significant* period after the drought’. Meat, according to the BFAP, constitutes the biggest single item of expenditure in a (middle-class) food basket, at 25% of the total. It is also, because of its cost, the first thing to be dropped from low-income food baskets.

‘As we live on R1,400 a month that I get from my son’s disability grant, we have had to sacrifice a number of household items in this drought. We used to buy 50kg (of mealie meal) a month for the household (of seven), but now we are only managing to buy 25kg. I used to cook twice a day, once in the morning and then again at night, but now I’m only cooking once a day and the food must last the whole day. We have also changed what we’re buying – we can no longer afford meat (beef and chicken), bread or cosmetics. We used to eat meat every day.’

Poytla, Munzhedzi Communal Property Association (CPA), LIMPOPO

The HSRC March 2015 policy brief on *Gender, Small Scale Livestock Farming and Food Security: Policy Implications in the South African Context*, notes that ‘typical of the poor is that they spend more than 50% of their earnings on food’, and so low-income households are particularly vulnerable to price shocks. For example, by the time Finance Minister Pravin Gordhan announced increases to social grants in his budget speech in February 2016, they had already been rendered insufficient by food-price inflation over January and February.

Julie Smith of PACSA says the organisation’s ‘food barometer’, which measures the price of a low-income household’s real monthly food basket, indicates ‘widespread general hunger’, with new households joining the growing majority who are too poor to afford nutritious food. These are the households to which Oxfam’s *Hidden Hunger* report, released in October 2014, refers, when it notes that while 26% of South Africans ‘regularly’ experience hunger, ‘an additional 28.3% are at risk of hunger’. The Oxfam assessment came before the drought, which has set in motion the conditions for greater hunger.

The health consequences of hunger

Smith says that the minimum wage in the agriculture sector is not enough for people to access the food they need to be productive. The consequences ‘bear down on women’s bodies’, she says, in that they are compelled to spend much more time searching for special offers to maintain the basket of food their families are accustomed to. Limited food diversity and low nutrition also has health outcomes; these are reflected particularly in non-communicable diseases such as obesity, diabetes,

hypertension and heart disease. More women are visiting clinics with these conditions, which are beginning to be reflected in national data. The consequences are also visible in the over 30% of children under five who are undernourished and stunted, to which Oxfam also draws attention in its *Hidden Hunger* report. A major cause is the lack of calcium.

'We used to buy 50kg of mealie meal in a month but with the price increases we're now buying 40kg and samp, flour, rice and beans. I haven't bought sugar (I used to buy 2kg), potatoes or cabbage this month. We used to have three meals a day [before the drought] but now we have two. The children get food from school, although the bus fare to school costs R400 a month. If I don't have enough food, I try to fill the children and I eat the burnt remains. But at month end, I'm forced to reduce the portions even for the children. I try by all means to give them something to eat, but they do complain of hunger.'

Welile Mpungose, MSINGA, KWAZULU-NATAL

'As food prices have risen so high, by the time month end comes you're really desperate. The problem is that even the less expensive mealie meal is now expensive, and that's what we're buying now – even though it is bitter and it doesn't swell properly during cooking, so one doesn't get full after eating it.'

MaMdlolo Ndlovu, MSINGA, KWAZULU-NATAL

Sacrificing nutrition for affordability

Although PACSA only collects data in Pietermaritzburg, the trends it reveals in low-income households reflect the general picture in South Africa. One of these trends is the reduction of protein intake: since October 2014, in a typical household, monthly purchases of cheese have stopped completely, beef purchases have declined from 3kg to 1kg, and chicken consumption has dropped from 8kg to 6kg, with the more nutritious breast and wing meat typically being substituted by more fatty and less nutritious feet and necks. However, purchases of starch, sugars and food flavouring have increased: maize from 15kg to 25kg, brown sugar from 4kg to 10kg, salt from 500g to 1kg, soup from 400g to 600g, along with increases in purchases of carrots and onions. In other words, low-income households are increasingly reliant on more affordable, starchy foods and finding new ways to flavour them. This is reflected in how women prioritise expenditure on food: money is allocated first to starch provisions, and then to flavours.

PACSA calculated that in 2015, a typical household of seven members needs a minimum of R8,000 a month to be able to afford a regular, nutritional food basket. This income could be a combination of, for example, wages, social grants, subsidised services and cheaper food. But with an average monthly household income of just over R5000 – made up mainly of social grants, piece work, and some minimum-wage income – the majority of South Africans are unlikely to be sufficient to pay for such a food basket. Indeed, PACSA's food basket costs 56% more than the actual basket low-income households purchase on a monthly basis, and its nutritional value is also much higher. Food-price inflation, lack of livelihoods opportunities, and inadequate incomes are pricing a healthy diet beyond the means of more and more families. PACSA household data confirms statistical data on employment trends, saying work opportunities are difficult to find, and older women are now more likely to be employed (often in part-time domestic jobs) than their adult, better-educated children.

'I buy 50kg of mealie meal once a month for R350 from my pension; then I buy sugar, 10kg of potatoes, oil, salt and tea bags. With the child grant, I pay R250 for the school bus. After that, the money is finished. I've abandoned the garden, which I was watering from water carried in a drum on my head from the dam. I had to stop watering the garden because I needed the water for household use. I have nothing, since no one is working in this house. We live off this land and these cattle. The prices of food are now exceeding my pension, and yet I must still pay for buses for school. At least the children eat at school, because they've been going to school without food since we began eating once a day. I do want to plant my garden but I



Finding solutions to hunger

The Msinga NGO, Mdukatshani, is attempting to address longer-term structural problems that reduce the productivity of women livestock farmers, by focusing on local veterinary and production management support for rearing chickens and goats. Despite the impacts of the drought on crops and food prices, many of the women involved report that their families continue to have sufficient protein in their diets thanks to the chickens and eggs, while the measures for goats have helped reduce livestock deaths. However, lack of reliable access to water (and land) for use by large livestock and gardening remains a constraint to producing home-grown food.

**CHILDREN
FETCHING WATER**

can't get enough water for that. And I can't even ask my neighbours anymore.'

MaMkhize, MSINGA, KWAZULU-NATAL

A population under pressure

The majority of South Africa's population is therefore vulnerable or under increasing pressure. For many who do have a job, the wages are low, while the amount spent on food and (for those who have them) services is high relative to income. 'We now expect a 15–20% food-price inflation and increases in the costs of services. Anyone reliant on supermarkets for food purchases is going to be in trouble' (Smith, pers. comm., 2016).

Even low middle-income households, with incomes of R12,000–13,000 per month, will come under pressure if current trends prevail. Consumer Price Index (CPI) approximations are based on monthly household incomes of R12,800. The coping strategy of these households, which is to borrow money in order to feed children, means that the quality of their diet is unlikely to be affected in the short term. However, increasing indebtedness will eventually result in diminished food diversity even for people in this income bracket. 'This is the middle class game around the plate,' says Smith.

While the media discourse on drought (as discussed in Section 2.3) emphasises the vulnerability of agriculture as a single sector, interviews with key respondents show that the impact of the drought is not geographically limited to areas of poor rainfall or where water delivery falls short, but is in fact universal due to its effect on food prices, availability and quality. Remedies geared towards 'rescuing' agriculture do not fully take this into account – and are therefore unlikely to have the desired effect, beyond helping farmers recoup profits.



**SHARING
WATER
FAIRLY IN A
DRY COUNTRY**

SHARING WATER FAIRLY IN A DRY COUNTRY

'We've been defeated because there's no water. This drought ... nothing has survived. The municipality brought water here once but I can't remember which month it was now.'

MaDonsela KaBuzo, MSINGA, KWAZULU-NATAL

South Africa is dry country – the 30th driest in the world – which already uses 98% of its available water. This raises key questions: is there enough water, will it last, and – crucially – who gets it? The short answer is that there is enough water for current needs as long as there is no drought, but future needs will only be met through a dramatic improvement in the management of the resource, together with equitable redistribution.

Provided the nation cultivates a culture of water conservation and water-demand management, there is enough water to meet projected urban development needs over the next 20-30 years. South Africa has excellent legislation, and in the past has been good at planning and construction of major infrastructure. However, that planning has slipped in recent years as skills capacity has waned (for example of water engineers, particularly at local government level) and the rains have held good, taking the pressure off political decision makers. Maintenance of infrastructure has also been neglected, particularly in the case of town, village and rural supply systems (Des Van Rooyen, cited in News24, 10 June 2016; Versfeld, 2015; Department of Water and Sanitation, 2015).

The Department of Water and Sanitation estimated that by November 2015, when it started implementing limited drought relief measures, the current drought had resulted in water shortages in 18,880 settlements (out of a total of 28,000), with 7,334,000 affected households and 33,840,000 affected people. That is well over half of the national population who had already been without constant and reliable water access at a time when only four provinces had had drought disasters declared.

This section of the report explores the need for both equitable redistribution of water for multiple purposes along with a reduction in overall national consumption of water in the face of climate change and demographic pressures. It is imperative that lessons from this drought are learnt in order to develop more effective responses to what is a normal climatic feature, in an already dry country, that is being supercharged by recurrent El Niño events and increased temperatures.

The section begins with a snapshot of the day-to-day impact of water shortages in one rural community in Msinga. It reflects the very real tensions around competing water uses, as people try desperately to keep their cattle alive and their gardens producing so they can put food on the table; and shows how some neighbours are co-operating to store and share what little water there is

WHEN THERE'S NOT ENOUGH, WHO GETS IT?

From a small farm dam in Msinga flows a big question: 'Which is more important, food or cattle?'

When the taps run dry, as they have during this drought, and the fickle water tankers miss their rounds again, all paths lead to the dam for water. But when it's low, the women know not to bother – because if there's any water left, the men make sure it's the cattle that will drink. And when the men draw the line, there's no more water for the crops that the women grow to feed their families.

MaMchunu Ziqubu is a widow with two children. Last year she grew onions to sell to top up her only other source of income, her two child grants, but this year a dispute over the dam during the drought means she won't harvest anything.

'As a person without a husband, I live from the food from these fields,' she says. 'And now when we plant, there isn't even anything we can water with, because this dam is now the source of conflict. There's no water I can use for watering ... I've planted potatoes, but I'll get no gain from them. The dam is supposed to be for cattle. But with this drought, when we women use this dam to water our crops it uses up the water, so where will the cattle drink from when we all draw water from this dam? And so we've ended up abandoning our fields because we shouldn't get into disputes with the men. It is those men who have cattle who watch the dam. There is no particular person in charge or anything like that. Just men with cattle. If one sees you using the water, he would tell you to stop. It isn't so much that he chases you away, but they just warn you.'

Across the valley, other women tell the same story. MaSkhakane, lamenting her shrivelled crops, says: 'In our fields, we planted and everything died until eventually we just stopped trying. Even our dam has dried now and our husbands are saying that if we want to plant, we'll finish the water that is for the livestock. We only have a dam in our ward – there are no rivers nearby. And they're not actually our dams, they're for the men [for livestock].'

MaMkhize says that what little water they can get is now for household use, because there's not enough even for the household gardens. 'We've dug wells into the sand for drinking water [even though] I know this isn't healthy, [because] there's nowhere to get water from. I bought three (200-litre) drums with my savings for R1,000 each, but there are some families who haven't been able to afford this.' She sums up the intractable choices that come from having only one source of water to serve many needs: 'The men see their cattle as most important, but I think the vegetables are, as we need them to feed the children, and even the men in the evenings. But they say the gardens are wasting the water needed for their cattle.'

Storing and sharing the water

But while the men assert their control over the dams, some women find other ways to cooperate when they run out of water, by sharing what they have stored in their JoJo tanks. Mhlekelaphi Dladla says, 'I bought a JoJo tank and when it rained, I had water. Then everybody comes to ask for the water for drinking and they bring their containers, so it doesn't take long for the rainwater to finish. After that, I pay R200 to fill it up'

MaConco Zwane also shares what she has. 'As there's no rain and the taps have run dry, everybody comes and asks for water from my JoJo tank. I filled it up for R200 on Friday, but the water finishes within days.' Not everyone can afford to buy a JoJo tank. Instead, they buy as many *impongolo* (200-litre plastic drums) as they can afford, but they cannot stock up nearly as much water in these as in the larger JoJos.

'I haven't got a JoJo tank, only three *impongolo*,' says MaMdlolo Ndlovu. 'From the last time the government tankers came, I have half of one left. So I will have to buy water again now. This month so far I've paid R200 for water.' She adds, 'The water tankers come about every two or three months and fill up a 200-litre drum per family. Our main way of getting water now is to buy it from private vehicles that go up and down the road. We're getting into debt because of buying this water, but if you don't borrow the money and buy it then you just have no water. As we don't tonight. Last week I hired a car twice in one week, at a cost of R200 each time.'



FILLING
BUCKETS FROM
STANDPIPE

The women recognise how important the JoJo tanks at their homes are in taking care of their own water needs and those of their neighbours. One suggests that the best solution would be ‘to put in JoJos [for the community] because the dams run out, and the municipal tankers are unreliable. We should have a communal reservoir because we need water for livestock and for human consumption. We need a range of water sources for livestock as well as for people. Boreholes might be better and the water then pumped into a tank. Because the tankers are very unreliable. Although many houses do have water now, there are many areas that don’t have water, and that’s bad planning.’

GOVERNING THE WATER RESOURCE: POLICY AND INSTITUTIONS

South Africa’s water is governed by the National Water Act (NWA – Act 36 of 1998) and the Water Services Act (WSA – Act 108 of 1997). The Department of Water and Sanitation is the custodian of the country’s water resource and is responsible for ensuring that there are adequate supplies for the country’s needs.

Critically, while the **control** of water resources falls under national government, the **provision** of water services is the responsibility of local government, as outlined by the Water Services Act. There is little technical oversight, with poor or delayed planning and unmanaged implementation; this is most keenly felt at the local level, resulting in frequent rationing or interruptions in the water supply. During the drought, this has led to dams running dry due to lack of planning rather than lack of rain, meaning emergency measures (including transporting water to small towns) have had to be carried out sooner than would otherwise have been necessary.

Ownership and allocation of water

The National Water Act brought fundamental changes to South African water law. The most important of these was to shift water from private ownership to the status of public good.

The ‘water balance’ – that is, the relationship between water availability and its use – determines if, and how much, water can be allocated. A major change effected by the National Water Act of 1998 was that all water users who wish to legitimise their use are required to register ‘existing lawful use’, this being the volume actually used over the period 1996–1998. Any new (additional) use must be licensed from an allocation of still-available water. In order to claw back water for reallocation, both for purposes of equitable redistribution and to meet the needs of the ecological reserve, the Act provides for a process of ‘compulsory licensing’ – within which existing users may have their ‘existing lawful use’ reduced in order to free up water.

Strategies and planning for water resources

The National Water Act was noble in its intentions, but has been less successful in its execution. The Act requires the preparation of a National Water Resource Strategy (NWRS) every five years – with the first of these completed in 2004. This included a significant effort to get a grip on the status of the total water resource. The second NWRS was published in 2012, and while it attempted to steer the country firmly towards equity in use, it failed to update the basic data on use and availability. It is on the basis of this data that many decisions must be made, so the gap in information is problematic.

The first edition of the NWRS (2004) showed that more than half of South Africa’s Water Management Areas are in annual deficit, i.e. water requirements exceed total available water. This, in normal rainfall periods, is despite significant augmentation through water exchange between rivers in and between catchment areas. The 2004 NWRS also identified the need to reduce unnecessary use of water and to make better use of existing water resources while simultaneously seeking alternative water solutions. These issues have come to a head in the current drought, and are compounded by the increasing water requirements created by rapid urbanisation.¹

South Africa already uses 98% of its available water resource, and the most easily accessible water has already been ‘brought to the table’. Policy dictates that no additional water may be allocated and licensed unless it is available in terms of the relevant Reconciliation Strategy. This means that compulsory licensing *with* reallocation is essential if previously neglected sectors of society (notably small farmers and rural dwellers), and the environment, are to receive their rightful share.

Furthermore, the second edition of the NWRS (2012) emphasised that water should support development and the elimination

1 One little-mentioned fact is that population projections for the 2004 NWRS were made at the height of the HIV/AIDS pandemic, when life expectancies were dramatically reduced. This situation has turned around, thanks to the rollout of Anti-Retroviral (ARV) medication, and very different population growth patterns are emerging, adding to the urgency of an information update.

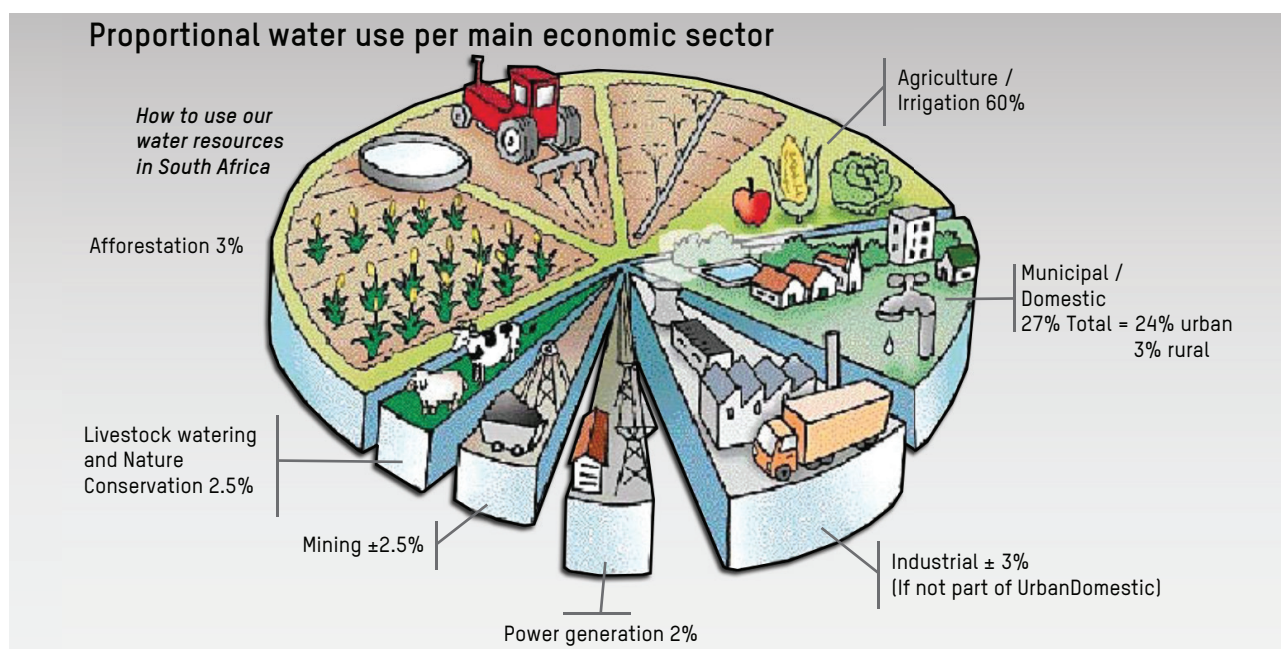


**FILLING
BUCKETS FROM
STANDPIPE**

of poverty and inequality; contribute to the economy and job creation; and be protected, used, developed, conserved, managed and controlled in an equitable and sustainable manner. A difficult balance has to be achieved between increasing demands to meet the needs of people who historically have not had reliable access to water, and the current and future needs of agriculture, mining and manufacturing. While many aspects of the implementation of the National Water Act may have been slow, there has been a major impact in that new water users may not extract water without authorisation, and thus have not been able to pillage the resource as happened in the past. Nevertheless, managing these competing demands on an already scarce but essential resource poses considerable challenges, which will only become more acute in the future as the effects of climate change increasingly take hold.

South Africa is a water-wasteful nation, with urban use far above international benchmarks. This is a hangover from apartheid days, when some groups and areas received an unlimited bulk share of water. While standards in government low-income Reconstruction and Development Programme (RDP) housing projects are not high, the drive to provide every person with waterborne sewerage and an individual supply of up to 250 litres of water per day is in conflict with water scarcity and delivery capacity. Historical, current and new users will have to shift expectations of the amount of water they feel entitled to consume, as well as its mode of delivery, as the resource and institutional constraints become hard limits.

Figure 2: Estimated water requirement by sector
(Department of Water and Sanitation, 2013)



Equity in water

Water needs to be shared amongst many sectors. Under the National Water Act, there has been an increasing focus on the requirement to meet international obligations, the ecological reserve, and basic human needs in addition to power generation, urban and industrial use, and agriculture.

The water services sector has a strong record of eliminating backlogs in both water supply and sanitation services. Most people in South Africa have access to water for domestic use, even if through a standpipe at 200m from their household. This has largely been achieved through the extension and expansion of surface water supplies using grant funding; with an important negative side-effect being a culture of 'infrastructure build' in which, for example, extensive pipelines are built but without budgetary or staff provision for maintenance. As a result of the neglect of the maintenance of infrastructure, only 65% of people who could be are receiving secure and reliable supplies.

'Two boreholes were drilled for us in 2011 but they've never been made operational.'

Daniel Khoza, VLEIFONTEIN, LIMPOPO

With regard to domestic water, people may draw enough to meet individual and household needs without being required to license that use. Municipalities must license their use for further distribution, on the basis of a formal allocation.

With 60% of the nation's water going to agriculture (primarily irrigation), most available water is inextricably tied to land. Distribution is therefore inevitably linked to the ownership of that land, which continues to be concentrated in the hands of white owners. However, the role that commercial agriculture plays in food production, the provision of jobs and the sustaining of rural livelihoods are also important factors that must be taken into account in the reallocation of agricultural water to achieve greater equity.

Subsistence farmers and very small-scale growers may also take some water to meet their needs, according to Schedule 1 of the National Water Act. The practical application of Schedule 1 varies on the basis of source and availability, but can be sufficient to allow farming on as much as one hectare of land without a licence. Small-scale users of groundwater and water captured from springs, small streams and through rainwater harvesting would be particular beneficiaries of Schedule 1, making this an especially important provision in the context of a drought.

Quantification of water: availability and use

Water is an available resource only if it can be abstracted and if it is of an acceptable quality for use. Fifty percent of the country's water is generated on 8% of the land (the mountain catchments that ring the Eastern seaboard), meaning that water has to be distributed over great distances, often between catchments, through a complex network of pipes, tunnels and canals. The variability in rainfall (and the regular occurrence of droughts) necessitates large dams to capture and regulate flow between and across years. It is therefore critical that the catchments be protected from erosion, overgrazing, bush encroachment, invasive alien plants and damaging agricultural practices.

Most of the utilisable potential of surface water has already been harnessed and made available for use. Only a very small volume of additional water can still be found from the total surface water resource for further development. Only about 9% of the total water resource is met from groundwater, although it is estimated that this volume could double (by comparison, 99% of rural America relies on groundwater). Crucially, groundwater is the single most important source in meeting the needs of the rural poor, especially for domestic water, where surface water cannot be provided at an affordable cost.

As at 20 September 2016, total dam storage was down to 59.3% against 74.8% the same time last year, with the Western Cape at 61.8% (after the end of its rainy season, compared to 72%) and Limpopo at 49%, compared to 76%. Gauteng is relatively well buffered, with storage still at 82.1% (compared to 89.7% last year). This is where many decision makers live, separating them from the reality of the drought.

Measures to provide more water

A Water Situation Analysis prepared by the Department of Water and Sanitation in 2010 made it clear that there is sufficient water for growth and development, but this is conditional on good management, proper planning and successful water conservation. Since water is available only if it is also of sufficient quality for use, there are concerns about declining quality, with dysfunctional sewerage plants and acid mine drainage the key issues. Municipalities have not kept pace with increasing urbanisation (as reflected in the Department of Water and Sanitation's 'Green Drop reports').

Although the problem of acid mine drainage has received a lot of attention, the country's economic reliance on mining means that mine-water pollution is likely to remain a problem. This pollution greatly increases the cost of treating water to potable standards, and yet such improvements in water quality are necessary to increase national drought resilience.

Water will become an increasingly critical factor in growth and development planning, and constraints already experienced in some towns can be expected to become commonplace. One scenario is that major water users will require costly relocation to the coast, where water can be desalinated. South Africa will also – and should aim to – become more dependent on the production of water-demanding commodities in neighbouring rain-fed countries, rather than through the use of the country's own limited water resources (see section 4.3 – Virtual water: transfers through food trade).

With few opportunities for new dams to be built, the following measures are being implemented or explored either to increase supplies or to extend the use of existing water:

- Water conservation and water-demand management.
- Significant increase in groundwater use.

- Desalination of sea water and treatment of saline flows in rivers.
- Treatment of polluted mine water, such as acid mine drainage.
- Use of treated domestic waste water.
- Reallocation to different users to ensure that basic human needs are met.
- Catchment protection, rehabilitation and management.
- The clearing of invasive alien plants.
- Rainwater harvesting systems with local management practices, including
 - Roofwater tanks;
 - Capture of run-off from gardens and lands into small dams or underground tanks;
 - Optimising infiltration, so that water enters the soil rather than leaving the land as surface run-off. This is essentially good land management with a focus on erosion control and conservation, and provides water for crop production.
- Importation of water-intensive agricultural goods rather than growing these locally.

Meeting the country's needs is, however, most dependent on optimising the management and maintenance of water-supply infrastructure – both distribution systems and wastewater treatment plants.

VIRTUAL WATER: TRANSFERS THROUGH FOOD TRADE

The idea of or 'virtual' or 'embedded' water describes the total amount of water that is used to produce a good or service. The concept is gaining traction (UN Food and Agriculture Organization, 2002) because it can be used in assessing various aspects of water management, food production and trade. Virtual water trade considers the total flow of water as a good moves from one area to another. Based on the amount of embedded or virtual water in a good, strategic assessments can be made on whether a country or region should produce its own good or import it.

In a report for UNESCO, Mekonnen and Hoekstra (2010) analyse the link between human consumption and the appropriation of global freshwater. Once a good is traded, the water becomes a virtual flow: a virtual river following the food from its place of production to its place of consumption.

These findings on the global mean water footprint can help focus attention on South Africa's water (and land) appropriation through the consumption of food, and to determine who are the primary beneficiaries of this water. As Table 1 below shows, the national production of beef used more than twice as much water as the production of chicken, and three times as much as the production of white maize. Yellow maize, a key component of livestock feed (for feedlot beef and broiler chicken in particular), uses more water than white maize but requires less land for its production.²

Table 1: Water and land used in production of selected foods

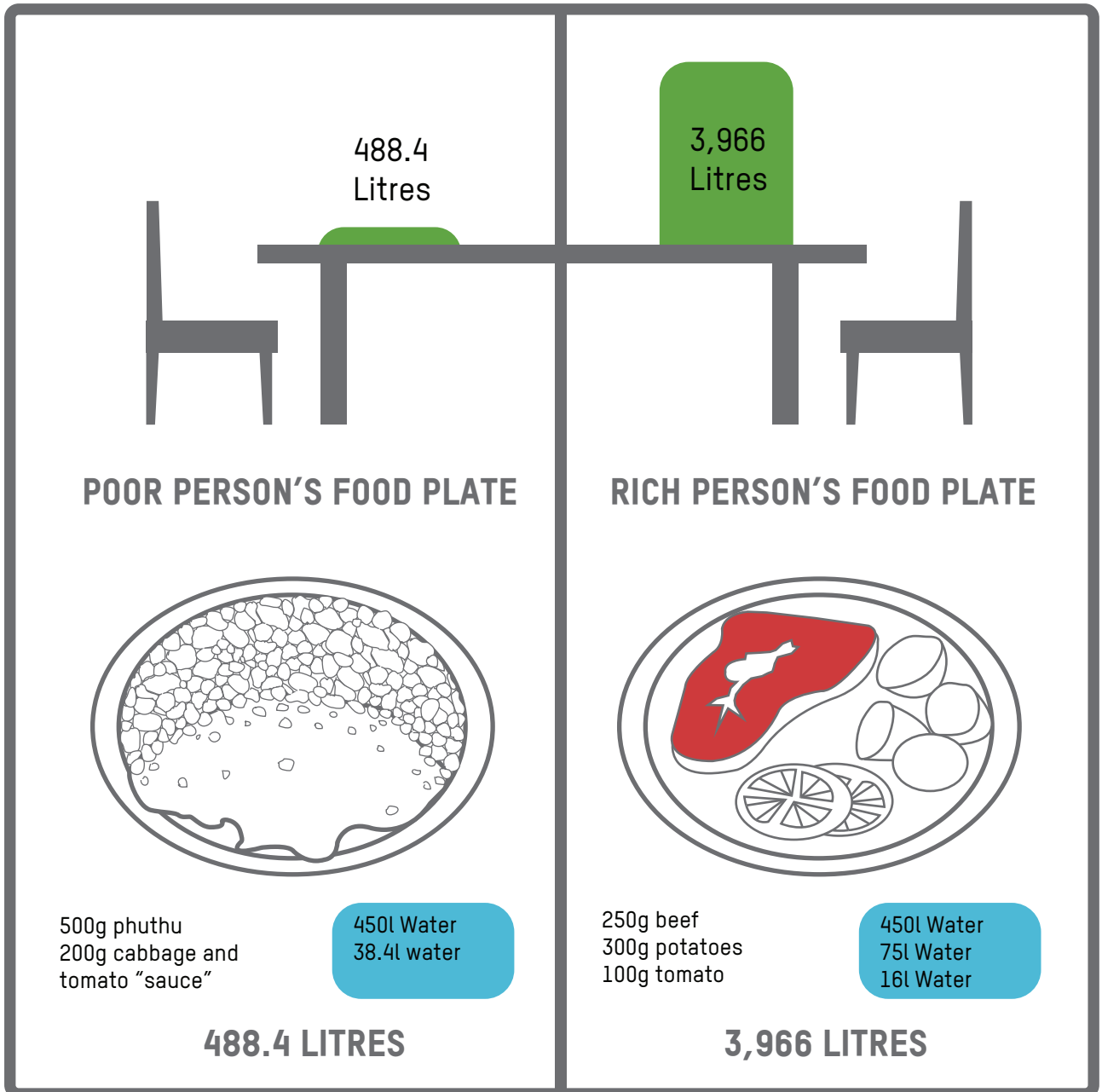
Crop	National yield '000 t	Total land '000s ha	Water footprint global mean: l/kg	Water footprint national '000 000 kl
White maize	4,702	1,448	900	4,232
Cabbage	0,142	0,003	200	0,028
Potato	2,215	0,130	250	0,554
Tomato	0,540	0,018	160	0,086
Chicken	1,499	0,005	3,900	5,846
Beef	0,823	-	15,000	12,761
Yellow maize	5,238	1,205	900	4,715

Data compiled from Grain SA, Stats SA (2013) and Mekonnen and Hoekstra (2010)

² In the 2015/6 season, yellow maize production took place on 1.129 million hectares, an increase of 6% on 2015, when 5.238 million tons were produced. White maize, in 2015/6, was produced on 1.422 million hectares, a decrease of 6.6% on 2015, when 4.703 million tons were produced.

Figure 3 below compares the amount of water used in production of a low-income person's meal against that of a high-income person.

Figure 3: Food (and water) on the plate



The low-income person's plate shows a meal with a high quantity of starch (phuthu) with a topping (cabbage mixed with tomato), while the high-income person's plate contains steak, potatoes and a tomato. The diagram indicates that upper middle class families consume a larger portion of water used in agriculture through the food they eat than do low-income households.

Although this is an illustrative exercise, the idea that the rich are bulk consumers of the country's water through the food they consume is useful in understanding who 'gets' South Africa's water (and land) and for what purposes. While middle-class consumption of meat is rising, low-income households tend to drop beef from their monthly purchases in response to rising food costs (Smith, 2016; Msimanga, 2016), exacerbating the already unequal distribution of land and water resources.

THE EFFECTS OF CLIMATE CHANGE ON THE WATER RESOURCE

The effects of global climate change are already being felt, although impacts are masked in the short term by the extreme natural climate variability to which South Africa is subject. The expectation is that the northern and the western parts of the country (Western and Northern Cape) will become drier, and the eastern half wetter. Temperatures will rise everywhere, resulting in higher evaporation and increasing water requirements. The climate will become yet more variable, with rainfall of greater intensity, and with longer and more frequent droughts. These factors will all test the ability of the country to remain agriculturally productive – and will place added strain on already stressed water resources. El Niño occurs approximately once every decade and is likely to exacerbate the effects of climate change; its impacts have been felt particularly strongly in South Africa in 2015/16, and 2015 was South Africa's driest year since 1904 (BFAP, 2016).

All models indicate that South Africa will experience less frequent and more violent rainstorm events as a result of climate change. Changes are also predicted in the seasonality of rainfall, with later-onset rains affecting the length of the growing season. Changes in the pattern of rainfall will affect run-off, while higher temperatures mean higher rates of evapotranspiration, affecting crop water requirements and water use by forestry, invasive alien plants and natural vegetation. These changes are likely to be accompanied by a reduction in the amount of land suitable for arable production, while livestock disease vectors are already spreading into new areas. These impacts will also reduce the amount of run-off which can be stored for direct human use.

All of these changes will require significant adaptation such as greater storage capacity, different farming systems, and crop varieties selected for their ability to cope with the changing conditions.

DROUGHT RESPONSES AND INTERVENTIONS

The key short-term government interventions to the current drought have been:

- Declaring drought in all provinces except Gauteng.
- Calling a 'war on leaks'.
- Optimising the operation of the Vaal River System.
- Drilling and equipping boreholes.
- Clearing invasive alien plants.
- Clamping down on illegal water users (especially in the Vaal System).
- Water transfers in KwaZulu-Natal from the Thukela River to Goedertrouw Dam, and from Othangathi River to Hazelmere Dam.
- Rainwater harvesting through provision of water storage tanks.
- Tankering of water.

The government (Government Communication and Information Service – GCIS, 2015) targeted relief to the provinces as follows:

- In **KwaZulu-Natal**, R449.2m allocated for the purchase of 45 water tankers, borehole drilling and rehabilitation, and water conservation and demand management.
- In the **North West**, the Department of Water and Sanitation together with provincial government targeted the Madibeng and Ngaka Modiri Molema municipalities to improve water and sanitation management, and rehabilitate dysfunctional infrastructure through a combined allocation of R331.2m.
- In **Gauteng**, the three municipalities together with Rand Water established a Joint Operations Centre to develop and implement a 'recovery plan for water services' (GCIS, 2015). This is following heat-related consumption increases that were not controlled, and which put supplies to some parts of Johannesburg and Ekurhuleni at risk. The plan entailed turning off water supplies for short periods to allow reservoir levels to recover, and urging citizens to reduce water use.
- **Across the country**, funding from the Municipal Water Infrastructure Grant, Accelerated Community Infrastructure Programme and the Regional Bulk Infrastructure Grant totalling R524m was allocated to 'increasing resilience in water supply' (*ibid.*).

Despite these interventions, focus group interviews with land-reform beneficiaries in Limpopo, small farmers in KwaZulu-Natal and farm workers in the Free State indicated that water-provision relief has been ad hoc, unreliable and difficult to access. People without secure and regular access to water have resorted to paying for it to be transported by private vehicle owners and are relying on raw water from dams and rivers. Local reciprocal initiatives – such as sharing water stored in JoJo tanks with neighbours – have often proved critical in the short term. Interviews with rural development organisations in the Eastern Cape indicate a similar range of problems with the government’s relief responses.

Civil society has mobilised voluntary relief through social media platforms, rallying both private and corporate donors. Initiatives include:

- Operation Hydrate: coordinates water donations and delivery nationally.
- South Africa Drought Relief: coordinates delivery of livestock feed, water and other essential items such as school shoes, warm clothes and blankets.
- Boere in Nood: largely provides fodder relief as well as cash donations.
- Bray Bale Out: provides fodder relief for a group of farmers in North West province.



**MIDMAR DAM
NOVEMBER
2015 AT START
OF DROUGHT**

The Department of Water and Sanitation has also put forward medium- to long-term measures including rainwater harvesting, groundwater use, desalination, wastewater treatment works, more dams, and seeking a solution to acid mine drainage (see Section 4.2 – Governing the water resource: policy and institutions).

However, most if not all the interventions undertaken by the Department of Water and Sanitation in the name of drought relief are activities that should be part of the normal programme in the management of water resources. Many of the civil society responses are both unsustainable and too dependent on voluntary goodwill to deliver the scale of relief necessary over an indefinite period to reduce acute vulnerability. A significant gap appears to be coordination of the widespread but localised efforts by government, civil society, private sector and community, particularly to identify and respond to the areas and people most in need.

WHAT HAS THIS DROUGHT TAUGHT US?

Droughts are normal and should be seen as a condition rather than an event. At the same time, drought preparedness will become ever more difficult as the population grows. Although urbanisation makes it easier to supply people with water in the short term, it can lead to intractable disasters if water shortages are not anticipated and managed. To meet future rural and urban demand, water provisioning must draw more intensively from groundwater resources to supplement surface water. This research has shown that JoJo tanks and boreholes are important in meeting needs during short-term localised water crises. This suggests that government should establish innovative partnerships with communities to support households to establish JoJo tanks, and to monitor, manage and rehabilitate boreholes.

The country's water resources must be carefully managed and planned for over both short- and long-term horizons, and must be based on accurate, properly maintained and localised data. South Africa may have enough water now, but planning for the long term is essential and a 20-year time horizon is insufficient. Furthermore, the need to balance water demands with other developmental initiatives should be built into all government infrastructure decisions, such as the water-demanding nuclear energy and coal-expansion options. It should also be factored into regulatory frameworks around water use and pollution in industry, specifically in mining. At more localised levels, the failure to allocate sufficient resources to infrastructure maintenance leads to unnecessary losses of potable water.³

While equitable redistribution of water for multiple purposes is a social and political imperative, overall national consumption of water *must* be reduced. The high levels of supply assured to domestic users will have to decrease if the resource is to be sustained in the face of climate change and demographic pressures, while agricultural policies must take much more seriously the increasing constraints over water supply, and support shifts to less water-dependent production and practice.

Furthermore, the references of government officials and politicians to drought as a 'God-given' event – and their palpable relief that rain has now fallen in parts of the country – create the illusion that South Africa has survived the crisis and can put the problems of drought behind it. This denies the features of severe drought as a slow-onset disaster that systematically strips away layers of resilience, sucking ever-increasing numbers of people into a vortex of desperation.

³ It also leads to counter-intuitive disaster responses. The Msunduzi Municipality, for instance, reduces water pressure between the hours of 9pm and 4am in order to make a 15% saving by reducing water lost through leaks.

The background consists of several overlapping geometric shapes. A large green shape covers most of the page. A light blue shape is in the top-left corner. A yellow shape is at the bottom center. A light green shape is at the bottom right.

THE NEED TO RETHINK FARMING IN SOUTH AFRICA

THE NEED TO RETHINK FARMING IN SOUTH AFRICA

'My situation has worsened since I stopped working on the farm. There's no laughter at home anymore. I'm even scared to walk outside now (from shame).'

December Radebe, WARDEN, FREE STATE

'There's an old man who lives here on the farm – he's a pensioner – and he has been carrying water for his cattle to drink because of this drought. This is not the way to farm.'

Sipho Baloyi, VLEIFONTEIN, LIMPOPO

With predictions that El Niño weather patterns and climate change are likely to increase the severity and incidence of drought in South Africa, the current drought provides an opportunity to rethink key agrarian issues. Of central importance is how to address the underlying structural inequalities that distribute different types and extremes of vulnerability so unevenly through the society.

The combination of South Africa's relative dryness and infertile soils limits the amount of land available for food production in times of 'normal' rainfall. Who uses, and who should use, agricultural land and water, and for what purposes, are thus important questions in a context of chronic climatic and economic turbulence. The following section explores these questions and finds that the solutions require a balancing act between competing imperatives, even when the focus is on vulnerable social groups. The drought adds urgency to finding this balance.

These competing imperatives include:

- Urban **and** rural South Africans are net purchasers of food (Musemwa *et al.*, 2015). However, unregulated markets exposed to drought-induced supply constraints and resulting speculation, and exacerbated by currency fluctuation, have driven up food prices. This has forced households that are dependent on social grants into trade-offs between food that is sufficient and nutritious, and food that is affordable.
- In good rainfall years, agriculture produces enough to meet the country's basic food needs but consumes the bulk of the total water resources, either directly or through water pollution. Rising temperatures are reducing the amount of land that can be farmed, while recurrent droughts put the stretched water resource under pressure. The efficiency of year-to-year food production is as important as its longer-term ecological sustainability.
- The impact of the drought on poorer, rural and women-headed households indicates the need for an agricultural economy that supports a wide range of livelihood combinations. These should include properly remunerated, permanent and seasonal farm waged-labour opportunities, employment in agricultural sectors at input (technology, fertiliser manufacture, logistics) and output (marketing, packaging, retail) levels, as well as income generation and contributions to household food supplies from small farming. However, the process of agricultural concentration, integration and specialisation (with bigger farms in the hands of fewer owners), together with the increasing domination of far-flung rural markets by big supermarket chains, currently undermines such opportunities.

THE LAND AND ITS AGRICULTURAL CAPABILITY

'Even when the gardens are producing well, we have to buy food. But usually we buy less than we're forced to buy now. That's because we've harvested nothing during the drought.'

Emily Matsheke, VLEIFONTEIN, LIMPOPO

Agri SA, the national farmers' union, reports the impacts of the current drought as follows (Agri SA, 2016):

- Drought-induced recessionary pressures on agriculture, reflected in year-on-year GDP declines of 18% in the first quarter of 2015, 19.7% in the second quarter and 12.6% in the third quarter.
- Depletion of natural fodder, with doubts about veld recovery prospects in 2016, leading to further livestock slaughter, deaths and rising red meat prices.

- Approximately 25% reduced area planted with summer cash crops, particularly in the western regions.
- Lower maize yield expectation due to high temperatures in December 2015 and January 2016, which compromised pollination.
- White and yellow maize deficit resulting in expected imports of up to 3.5 million tons, placing pressure on South Africa's balance of payments.

For a cattle farmer in Msinga in KwaZulu-Natal who has lost most of his herd, the drought is not simply an agricultural disaster but a personal one too – it is also the loss of his place in the world. As a participant in the men's focus group in Msinga put it, 'Something has been taken from my life, and my dignity and my worth as a man have gone.'

The severity of the drought is partly related to South Africa's agricultural potential. Just under 14% of land is used for cash crop production, and of this, only 3% is high-potential arable land. Much of the land under cultivation is thus semi-marginal for crop production, increasing the susceptibility of crop yields and harvests to recurrent drought and increased temperatures. Nevertheless, the El Niño weather patterns affect some areas more severely than others.

Table 2: South Africa's land use

Land use	Hectares (million)	As % of total
Total SA land	122	100%
Agricultural land	98.9	81%
Livestock	82.1	67%
Cash crop cultivation	16.8	14%
Horticulture	3.9	3%
High-potential arable	3.7	3%
Forest plantation	2.4	2%

Note: 44% of land under horticulture is in the Western Cape (Calculations based on National Department of Agriculture – NDA, 2007)

The area of land transferred through land reform (by 2012) is nearly eight million hectares or 6.5% of South Africa's total land, and is spread across these land-use areas.

Most of South Africa's agricultural land (about 83%) can only be used for livestock production. However, bush encroachment as a result of increased carbon emissions is threatening grasslands over large parts of the country (Alcock, pers. comm., 2016). Drought presents an additional shock to grassland forage supplies, and recurrent, endemic drought and warming puts production based mainly on grazing (cows and sheep) as opposed to browsing (goats and antelope) at greater long-term risk. The broad consensus of farmers in Msinga is that while all livestock has been affected, cattle have died in greater numbers than goats and indigenous chickens.

'The worst affected were the pregnant cows and those with suckling calves. Of my 13 cattle, I have one ox left.'

'I'd say 70-80% of the cattle died because every household has lost cattle. If you look at people's cattle kraals, you can see how empty they are now.'

– *Quotes from focus group with male livestock owners, MSINGA, KWAZULU-NATAL*

Climate change seems to indicate that shifts to livestock farming are necessary. Already, livestock farming is the highest income generator (R92.2m in 2014), followed by field crops (R45.2m). Despite this, it is the horticultural sector (currently generating R45.1m) that is growing most rapidly (15.5% since 2013), with livestock trailing behind (at 6.7%) (Stats SA, 2014). Horticulture is also the biggest consumer of agricultural water, while the single highest farming expenditure item is livestock feed, composed primarily of yellow maize and soya.

Despite these soil-related and climatic constraints, the National Development Plan (2011) has committed to extending land under irrigation for small and emerging farmers to create one million jobs in agriculture by 2030. The Bureau for Food and Agricultural Policy argues that this is possible if 'appropriate' labour policies are in place, and fiscal allocations to infrastructure development and economic growth continue. Irrigation could be expanded by 145,000 hectares if there were improved control over water losses and more efficient drip irrigation systems. The plan also requires that 'underused' land in communal areas and land-reform farms is brought into commercial production (Phillips, 2012). But the impact of this drought on the water resource suggests, firstly, that while some improved irrigation efficiency is possible, unallocated water may not be available; and secondly, that communal land is not 'underused', but is already largely used to the extent that the constraints on rangeland ecology allow.

DROUGHT AND AGRARIAN DYNAMICS

The legacy of the geographic segregation of races and economic patterns associated with apartheid and colonialism continue to reproduce a particular pattern of structural vulnerability. Ruth Hall (2015) argues that four key processes of agrarian change, that began in South Africa with the ascendance of a neo-liberal global food regime in the late-1980s, have shaped the South African countryside as follows:

- The overall decline and reorganisation of farm labour.
- Rapid consolidation of land ownership, along with a decline in the amount of land under agricultural production.
- The shift in the 'source of accumulation' from farm production to local and global agricultural industries invested up and down the value chain.
- Underproduction and underutilisation of land acquired through land reform, accompanied by new processes of migration and the changing spatial nature of complex livelihoods.

These historical processes (which are each explored in greater detail below), together with current dynamics, render certain people and areas more susceptible than others to drought, El Niño and climate change effects.

The overall decline and reorganisation of farm labour

Since 1959, when 1.8 million people worked on farms (Meyer *et al.*, 2013), there has been a steady decline of farm workers to 0.83 million in 2010 (Liebenberg, 2012) along with a reorganisation of the labour force to include fewer better-paid, permanent workers and greater numbers of lower-paid seasonal and contract workers, often women (ILO, 2014). Over 71% of current permanent workers are employed on crop-growing farms, as opposed to 22% on livestock farms and 7% on mixed farms (adapted from ILO, 2014). Previous droughts have driven the restructuring and shedding of farm labour, which land-reform legislation (such as the Extension of Security of Tenure Act, 1997) has not been able to reverse (Hall *et al.*, 2013).

The combination of drought-induced indebtedness, increased input costs as a result of rand devaluation, and conversions of land use to more extensive, low-input uses (in response to increased temperatures) are expected to escalate job losses in farming. The Western Cape Department of Agriculture said it expects job losses as a result of the 10% decline in production (Phakathi, 2016). Omri van Zyl (2016 pers. comm.) of Agri SA suggests that job losses may rise to as high as 20% of the non-seasonal formal-sector jobs, i.e. about 175,000 jobs.

The ILO report confirms that concentration and integration dynamics in agriculture are accompanied by a reorganisation of the labour regime, including labour shedding, but with better working conditions for a smaller group of skilled, permanent labourers. The Nkuzi report (2010) also observed that these labour-shedding processes spiked during times of crisis, such as drought. As discussed in the case study above, we struggled to find evidence of widespread job losses in Warden, despite the fact that drought impacts on jobs had been reported in the media. While farm indebtedness will undoubtedly be associated with some job losses (see below), the claim of widespread job losses is also partly a discursive ploy. It consolidates the idea that the drought ramifications are a national economic disaster, to be mitigated largely by aid to commercial farmers rather than to the seasonal and piece workers whose precarious lives are devastated by job losses and underemployment, and who are in desperate need of income support.

Rapid consolidation of land ownership and decline in the amount of land under agricultural production

Farmland ownership has been rapidly consolidating, driving ever-increasing farm sizes while the number of commercial farm units has declined from 90,400 in 1971 to 39,900 in 2007 (Hall, 2007; Stats SA). Early quantification of the impact of the drought on these trends indicates that over three million hectares of farmland were sold nationally from March 2015 to March 2016, for a total of R27.6bn (Bezuidenhout, 2016, citing Agri Development Solutions Chairperson, Johann Bornman). Grain SA's Chief Executive, Jannie de Villiers (Reuters, February 2016), argues that increasing numbers of commercial farmers are facing bankruptcy as drought-induced crop failures cause them to default on debts, making it difficult to raise crop finance for the 2016/17 season.

Compounding the effects of consolidation of the land area under production is the fact that nearly 10% of land and water has already been diverted away from farming to leisure uses and residential settlement, a trend likely to increase as drought and warming raise the economic risks associated with farm-based livelihoods.

The longer-term implication of consolidation of land ownership is that, unless government intervenes, drought will make it increasingly difficult for those wishing to enter farming to do so, while small farmers will increasingly struggle to compete and stay in production. 'Drought will definitely increase land consolidation, and the resulting efficiencies of scale will create new barriers of entry to the emerging farm sector,' says researcher Stephen Greenberg (pers. comm., 2016). However, as outlined below, Cousins (pers. comm., 2016) argues that with more farms available for sale at lower prices, the drought offers the government new opportunities to redistribute land to small commercial farmers.

Shift in farm production profitability to industries up and down the value chain

While all farmers – large and small – as primary producers become 'price-takers', in that they are unable to control the costs of inputs or to negotiate better prices for their commodities, some farmers have invested up and down the value chain, creating agri-corporates (Cochet *et al.*, 2015) that have more resources to cope with shocks such as drought.

Case study: the impact of the drought on work in Warden, Free State

The picture of job losses arising from our research in Warden, a maize-growing area in the Free State, is much more nuanced than the general picture provided by national predictions. There have been job losses, but these have mainly been from an apple farm, and it appears that apples are a marginal crop for the area. These job losses seem to be the result of drought exacerbating the sector's underlying vulnerability. The most disastrous impacts of job losses and underemployment are on already marginalised people – the seasonal and contract farm workers, who are unable to maintain a precarious but important income stream.

Anna Motaung lives in a shack settlement on the outskirts of Warden. She works on a potato farm 'when there's work available, but it depends on the weather and how the farm is doing'. She gets paid R90 per day. 'It used to be R100 per day, but the farmer says the business is doing badly so he has reduced the wages.' With food-price increases and the drought that has made home gardening futile, survival is 'very, very difficult now'.

Living in the same shack settlement on the edge of Warden, Njanyana Selepe and his wife Pawulina have no other income source beyond poorly-paid contract work, which was always insecure but is currently non-existent. 'The farmer told us the rainfall was very low so he'd let us know when he needs us again,' said Njanyana. 'But until now, we've been waiting for him to call.' Without work, they eat from Pawulina's poultry stock and her small but carefully tended garden. Hunger is daily reality.

Even those with more stable situations have seen their work conditions change and their incomes decline. Rebecca Radebe said, 'My husband used to start work at 7am but he now starts at 8am. He usually gets an increase in February, but this year there was nothing. Most years he works overtime in December because there's so much work, and then gets paid for the overtime, but this year there was no overtime, and no overtime payment.'

At the same time, some better-off farm workers, like Johan Moloi, can expect to see an increase in their additional income sources as a result of the drought, for example, as the price of cattle increases. Johan and his wife Anna live in a house provided by the farmer in Warden where Johan has worked for 33 years. The farmer also provides free water and electricity, and pays Johan R3,500 per month and a post-harvest bonus, which was R8,000 last year. Johan is allowed to keep four cows, with the owner providing inputs, but he must sell the calves every year. This gives the family an additional annual income of about R16,000; this is expected to increase in 2016, as cattle stock shortages drive up prices. Anna receives an old-age pension in addition to a foster grant for one of her grandchildren. Her home shows evidence of a life of relative ease: a washing machine, a fridge, freezer, electric stove and a television.



**MEN'S FOCUS
GROUP, MSINGA,
KWA ZULU NATAL**

The following example illustrates the concentrated power of these corporates and demonstrates that the sector as a whole does not necessarily require government support to recover from the effects of drought. Although the Kassier Report recommended deregulation in the beef supply chain in 1992 in order to increase participation, concentration in the feedlot beef industry since then has driven the further vertical integration (i.e. single companies incorporating different stages of production usually performed by separate companies) of the beef supply chain (South African Feedlot Association – SAFA, 2013; NDA, 2004: 172). According to *News24*, 95% of South Africa's beef now comes from feedlots. The South African Feedlot Association markets 80% of South Africa's beef from nine primary players. One of these, Karan Beef, began as a family farm in the 1970s and now owns the largest feedlot in Africa. While it has undoubtedly been affected by the drought impacts on grain yields and forage availability, the expected increase in the price of beef makes it less clear that Karan Beef requires emergency relief. As Omri van Zyl, Executive Director of Agri SA, points out, the impact of the drought is not the same for everyone: '... some farmers are losing animals, while feed providers are making a lot of money. You lose on the swings and make on the roundabouts' (2016, pers. comm.).

While it is clear that drought exposes less efficient agri-businesses and commercial farms, it also drives changes in the food economy. Bornman predicts that 'bigger farmers and cluster groups [will] play more prominent roles in the supply and production of food' (cited in Bezuidenhout, 2016). Two conclusions emerge:

- Firstly, robust and diversified corporates will take advantage of increased commodity prices to secure higher than normal profits, which, together with increased overall levels of indebtedness, will drive further agricultural concentration;
- Secondly, the commercial farm sector's call on government to bail it from the drought impacts suggests the limits of free markets, even for commercial farming proponents.

These trends suggest that unless government strategically intervenes to actively redistribute land and capital resources, the existing dynamics driving agrarian concentration will be exacerbated by drought, and accompanied by rising rural unemployment and inequality.

Underproduction and underutilisation of land acquired through land reform

Cousins (2015) suggests that it is politically and economically necessary and feasible to redistribute all South Africa's commercial farmlands, except those in the hands of the top 20% of producers, to about 200,000 market-oriented small farmers. He argues that this is necessary for two main reasons. Firstly, it will reduce the political flashpoint of historical African dispossession and persistent inequality in land ownership. Secondly, it will transform the agrarian structure through the creation of a class of petty commodity producers, who will engage in competitive processes resulting in a greater distribution of profits across the agricultural sector. With expectations of increased commercial farm indebtedness, the drought should bring more farms onto the market and provide an opportunity for increased redistribution.

Recent empirical data on farmers in the former Bantustan areas support Cousins' proposal. Aliber *et al.* (2013: 15) report that in 2010 there were 150,000 'commercially-oriented' smallholders, earning on average R35,000 per annum, and 2.6 million 'subsistence-orientated' households, earning on average R1,000 per annum. The commercial smallholders grew by 29% between 2002 and 2010, contributed R5.3bn to rural incomes, and employed in the region of 10% of agricultural workers nationally (*ibid*). This suggests that petty commodity production is occurring and is expanding already, even without government support, and could be expanded further with government support.

However, Van Zyl of Agri SA (pers. comm., 2016) cautions that small farmers have little buffer against drought impacts. 'All farmers reinvest capital in their farms and drought represents direct capital loss, especially where livestock is sold off at sub-optimal rates because of poor condition and oversupply. The problem might not necessarily manifest in household food insecurity, but it will show in reduced income generation and the loss of capital, especially in livestock herds. Farmers who are not diversified and who can't use land as collateral will have a major credit crunch, which will impact on their ability to re-establish herds and crops.'

David Baloyi of the Mavungeni Communal Property Association (CPA) in Limpopo agrees with Van Zyl's assessment. Head of a co-operative that farms 42 hectares of dryland macadamias, Baloyi said last year's harvest was 98 tons, but this year the co-operative expects 65-70 tons due to the drought. 'We could get up to 200 tons if we were irrigating', but the contractors the Department of Agriculture hired in 2010 to install an irrigation system 'failed to put in the electricity, and now the pipes have been vandalised'. Despite profits of R600,000 last year, credit access remains a challenge. 'It's very difficult to get credit to do expansions ourselves. The Land Bank interest rate is very high, and although our bank can see we have money, it won't loan us the R100,000 we need. I don't know why.'

Similarly, Daniel Khoza of the Ximange CPA in Vleifontein, Limpopo, says: 'We have about one hectare of potatoes and about five hectares of cabbages. We'd like to put in 25 hectares, but the challenge is we don't have the capital to put in irrigation so we're completely dependent on rain. With the increased prices of food, we could have made money from potatoes and cabbages this year.' However, in addition to drought and credit access, this CPA suffers from the typical dysfunction involved in collective ownership, which often make operational decisions difficult and cumbersome.

Hall notes that processes of agricultural change are a cause of migration, and there have been predictions that the drought will accelerate the migration of workers off farms to cities, or to other agricultural areas. While this is likely, data on this is so far unavailable.

Farming is an important livelihood buffer

The drought has thus helped to identify some of the underlying causes of land reform's poor reputation. In addition to these, recent research (Cousins, 2013; Dubb, 2015; Hornby, 2015) indicates that many rural households are dependent on complex livelihoods that are tightly bound up with food and agricultural commodity markets, and are subject to forces of differentiation that create diverse, differing and unstable interests. Small irrigated plots and livestock herds nevertheless make an important contribution to the total income of households that are highly dependent on social grants and increasingly unreliable wage income. Gardens are key to enabling households – particularly those headed by women – to top up food purchases and stretch out social grants. Small-scale farming is thus an important livelihood buffer against shocks, such as the death of a family member or retrenchment, often buying time while households struggle to secure a new livelihood footing.

While there is little indication that poor rural households are net producers of food, these farming strategies provide an important layer of resilience. The drought has chipped away at this layer by stifling home gardens, destroying available livestock fodder, causing livestock deaths and reducing household capability to restock for new production. Despite these impacts, government relief has been under-funded, sporadic, and frequently has not targeted those most in need of support.

'This drought has been oppressive. Our work has produced nothing, and yet everything has been hard. The heat, the time taken to water crops, cutting grass to feed the livestock. Everything has taken extra effort. It has oppressed us.'

Malais Mutwa, MSINGA, KWAZULU-NATAL


In addition to emergency relief, longer-term programmes are required which are geared at strengthening agro-ecological resilience (such as no-till farming and soil moisture maintenance) and adaptations to climate change (such as shifting to livestock farming); these should be funded from dedicated public finance allocations. To achieve these allocations requires advocacy alliances between household and small farmers, civil society organisations and sympathetic government officials (Greenberg, pers. comm., 2016). Yet civil society organisations have found it difficult to respond to the disaster. With a few exceptions,¹ donor requirements do not allow them the flexibility to put aside time-bound deliverables and respond to humanitarian disasters.

'I filled in the forms to get drought relief from government. They said there was only enough left for 20 people, but by then the sun had set so we went home. The next day, they phoned us when we had already hired a vehicle to go and get the help. They said it's finished and we mustn't come. I don't know how that was possible. We think there must have been some crookery.'

Malais Mutwa, MSINGA, KWAZULU-NATAL

Drought greatly compounds the complexity of the issues Hall identifies and the proposals Cousins puts forward. Given that the severity and incidence of drought in South Africa is set to increase as a result of climate change, it is vital that government takes advantage of the opportunity the drought provides to rethink agrarian policy and to address the underlying structural inequalities that render some people and groups so vulnerable. This reform should focus on the production of food in sufficient quantities and at the lowest possible prices to urban and rural consumers; the creation of employment through agriculture; and support for small farmers involved in complex, heterogeneous livelihoods.

¹ For instance, the Southern Land Cape Committee has been involved in pressuring government to respond in a timely and efficient manner to provide relief to the small-scale farmers they work with.



CONCLUSION AND RECOMMENDATIONS

CONCLUSION AND RECOMMENDATIONS

Although the drought has affected large and small farmers, particularly those producing maize, wheat and livestock, the impacts of the drought go well beyond those of an agricultural disaster related to reduced rainfall. This drought has exposed critical fault lines in South Africa, which require urgent attention if the current and future combinations of recurrent droughts, increasing El Niño events and rising temperatures as a result of climate change are to be managed sustainably. In the short term, the drought has created a national disaster that places severe burdens on low-income rural and urban households, who are reliant on buying (rather than growing) their food, while losing opportunities to secure income through employment and farming. Along with the reduction and reallocation of the water resource, farming in South Africa needs to balance water use and its conservation, the efficient production of food and of white maize in particular, and ensuring the availability of sufficient, nutritious, affordable food. These are policy challenges in 'normal' times. As recurrent drought becomes 'the new normal', these challenges will escalate if they are not effectively confronted now.

KEY FINDINGS

While the drought has created multiple levels of vulnerability, with impacts spread across society, this research has focused on more vulnerable groups of people, in particular farm workers, small farmers and families who are heavily dependent on social grants to secure their livelihoods. With respect to these vulnerable groups, our research finds that:

- The narrow definition of drought limits understanding of its causes and consequences, and the range of necessary relief.
- The poor governance of the water resource has in key respects created the current crisis.
- Drought combined with unregulated food markets has resulted in food inflation that pushes ever-increasing numbers of people into acute hunger, creating a national and regional crisis.
- Drought exacerbates existing structural dynamics in agriculture, making it necessary to urgently rethink the sector.

A narrow definition of drought limits the range of necessary relief.

The official and popular definitions of drought in terms of reduced rainfall are too narrow to describe the spread and severity of its impacts, and perpetuate an understanding of drought as a singular event rather than as an extended, multi-factor process that includes water scarcity, recurrent droughts, extreme weather events (such as El Niño) and climate change impacts on temperatures. Most importantly, it fails to take into account the social and political dimensions of drought. The effect of such narrow definitions is to limit the range of necessary relief-related interventions.

Poor governance of the water resource has in key respects created the current crisis.

The drought has exposed hazardous shortcomings in the planning and management of the country's water resource. South Africa is a water-scarce country, already subject to recurrent droughts, and unless urgent action is taken faces the prospect that water supplies in more and more areas will run out. The challenge is that reduced water consumption and recycling need to happen at the same time as redressive redistribution to extend water services to those who have historically been deprived of them.

Drought combined with unregulated food markets has resulted in food inflation that pushes ever-increasing numbers of people into acute hunger, creating a national and regional crisis.

The most extensive, national impact of the drought has been on food prices and the capacity of low-income households to purchase sufficient quantities of nutritious food for their families. Food inflation has drawn more families into a crisis of hunger than the 26% identified in Oxfam's 2014 *Hidden Hunger* report. As a result, low-income households have begun to substitute protein-rich foods with flavoured starches in their monthly food baskets. Research participants in three provinces asked for the maize staple to be subsidised, enabling them to reintroduce a range of foods into their baskets.

Drought exacerbates existing structural dynamics in agriculture, making it necessary to urgently rethink the sector.

The drought greatly exacerbates existing dynamics in the agricultural sector, including the reorganisation of the labour regime, the pressures on multipurpose small-farm production systems, the concentration of landholdings and integration of large commercial producers in input and output markets, and the ever-decreasing area under production as a result of recurrent drought and climate change. These dynamics drive social inequality, which the drought will continue to exacerbate unless government intervenes. The combined effects of recurrent droughts, water scarcity and climate change suggest that it is time to rethink agriculture and its role in South Africa's economy and food system.

RECOMMENDATIONS

Redefine drought to enable an appropriate response

The drought is not simply an agricultural disaster; it is, more importantly, a social disaster in terms of its universal impact of food-price escalations. Therefore:

- A national disaster should be declared.
- A universal disaster grant should come into immediate effect in recognition of the impact of the drought on food prices and the costs of securing water. A universal grant would be relatively simple and cost-effective to implement, given that South Africa already has an extensive system of social grant administration.
- 'Drought' should be redefined to ensure greater understanding of its causes and its ramifications across society, ensuring a long-term, equitable response.

Ensure the equitable and sustainable redistribution of water

State governance of the public and private sectors is critical for a sustainable water system and the fair distribution of water for human and ecological needs. This requires long-term planning, with limits set to growth based on the water resource, and careful monitoring of climate change and relevant adaptive planning. Therefore:

- Extended demand and rightful share should be met through recycling, tightened restrictions on the use of potable water, prioritisation and careful management of groundwater to supplement surface water use, domestic harvesting, and soil moisture maintenance practices.
- The state roll-out of rainwater tanks should be extended to all low-income households, with reserve back-ups in the form of community reservoirs and community-managed boreholes to catch and store rainwater.
- Water management policy implementation should focus on water conservation and water-demand management, including in the distribution system, urban and agricultural uses, and catchment management, as well as tighter restrictions on users as the norm.
- Maintenance of existing water storage, provisioning and treatment facilities must be reprioritised to address the recent maintenance neglect.
- Public investment decisions should be based on water allocation assessments and the real and full costs of water consumption and pollution.
- Penalties should be applied for wasteful water use and pollution, and incentives given for the development of domestic, industrial and agricultural recycling practices.
- Controlled allocations of water for human life (drinking, cooking and cleaning), household food gardens, and non-profit small-livestock farming systems (poultry, goats and sheep) should be free.
- Consumption-linked charges should be imposed on higher-use households (e.g. for leisure uses, car washing, garden watering, use of washing machines and dishwashers).
- Full costs of water should be charged for profit-making: agriculture and industry.
- A 'sin tax' could be extended to certain middle-class consumption goods which use high amounts of water in production (e.g. beef, coffee and chocolate).

Ensure all South Africans can access sufficient, affordable, nutritious food

Strategies to reduce the impact of drought on the cost of food across the country and the region involve both short- and longer-term interventions. Amongst these, food policy should prioritise the price of the white maize staple, both for South Africans and the region. Therefore:

- An emergency universal grant, pegged at inflation on low-income household nutritional food baskets, should be provided. Alternatively, all social grants should be increased by food-inflation rates on low-income households. The availability and requirements for accessing the Social Relief for Emergency Grant should be widely publicised.
- Mechanisms for stabilising the price of white maize need to be investigated, including delinking white maize from market

dynamics through input subsidies, state-provided crop insurance schemes, milling co-operatives (possibly state-owned enterprises), floor-price ceilings and state purchase guarantees.¹

- Indebted farms growing white maize should be redistributed to small and emerging commercial farmers, and appropriate support provided to enable productivity.

Rethink farming and agricultural relief

The agrarian structure is vulnerable to crises, including drought and political and economic crises. It is imperative that a new structure comes into being – one that supports a more equal society and can potentially regenerate the rural economy. Therefore:

- Immediate drought relief in the form of feed and fodder transfers should be directed at owners of small livestock (chickens and goats) rather than owners of cattle. That is, direct support should be given to a broader range of livestock owners, and aimed at livestock that require less support to keep alive (per unit) and meet the needs of a greater number of low-income consumers.
- Support to small-scale cattle farmers should be directed at restocking breeding cows once the risk of drought is over. Given guarantees of state support to do this, farmers should be persuaded to reduce herds and focus on keeping a smaller number of breeding stock alive.
- Land should be redistributed to small-scale and emerging commercial farmers, with appropriate technological and production support, including access to credit and produce markets, subsidised insurance and climate adaptation strategies.
- The extension of irrigation to stimulate the rural economy, as proposed in the National Development Plan, should be subject to ongoing review.
- Bigger allocations of public funds should be made to develop and support climate-adapting and agro-ecologically resilient small-farming methods, which are less water-demanding and are geared to meeting multipurpose household farming systems.

RESEARCH GAPS AND OPPORTUNITIES

Understanding the escalation in the price of white maize

- Research should question the narrative of supply-and-demand as an explanation for the white maize price escalations, and answer the question: ‘who benefits from the increases?’.

Definitions of drought/water shortages based on human rights approaches

- Define which human activities should be at the centre of determining when drought constitutes a disaster, and propose the operational requirements for such a declaration.

Industrial investment dynamics on the water resource

- Investigate long-term water consumption and pollution as a result of investment priorities in mining and energy sectors, specifically coal, nuclear and fracking.

¹ Since white maize is only routinely produced in Africa and Mexico, this option should not be subject to the volatility of global capital.



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Widow, dependent on child grants. Surviving drought. Msinga, KZN.

Mutwa, Malais Zwelakhe. 29 March

2016. Small crop and livestock farmer. Managing livestock and cropping through drought. Msinga, KZN.

Msimanga, Mpiteng. 15 March 2016.

Makhoti (wife) in compound land reform household. Surviving the impacts of drought. Besters, KZN.

Mr Mwelase. 30 March 2016.

Chairperson: Livestock dip tank association. Strategies for keeping cattle in a drought, including accessing government relief. Msinga, KZN.

Mncube, Hambaseni. 7 February.

Small farmer in Msinga, KZN. Impact of drought on livestock, crops and household. Msinga, KZN.

Motaung, Anna and Motaung, Jonas. 16

March 2016. Shack settlement residents on the outskirts of Warden. Impact on seasonal farm work. Warden, Free State.

Salepe, Pawulina and Njanyana

Salepe. 16 March 2016. Shack settlement residents on the outskirts

of Warden. Impact on seasonal farm work. Warden, Free State.

Sithole, Poland. *3 April 2016.*

Small farmer on the Mooi River irrigation scheme. Drought and infrastructure maintenance: impacts on small farmers. Mooi River, KZN.

Radebe, Rebecca. 16 March 2016.

KwaLori, Corner Farm, Warden. Drought-related evictions and other impacts. Warden, Free State.

FOCUS GROUP DISCUSSIONS

Warden shack settlement. *18 March 2016.*

Residents present: Jonas Dlamini, Joseph Malinga, Nkosana Xaba, December Radebe, Thabiso Tsotetsi, Jabulani Xaba, Jabulani Twala. Organised by and held at Pawulina Salepe's house in Warden, Free State.

Munzhedzi CPA's Pfano Agricultural co-operative (Limpopo). *23 March 2016.*

Co-operative members present: Abenezer Maluleke, Kutama Tshishonga, Emily Matsheke, Samson Rambau, Poytla Netshilungwi, Frans Mal'sha. Organised by Nkuzi Development Association, and held at land allocated by the CPA to the co-op.

Msinga women. *29 March 2016.*

Present: MaSkhakhane Mthethwa, MaNdebele Skhakhane, MaDlolo Mbatha, MaNdlovu Khumalo, MaMkhize Ndokweni, Hlengiwe Ndlala, Khipitile Mvelase (more women arrived during the discussion). Organised by Mdukatshani, and held at MaSkhakhane's house, Msinga, KZN.

Msinga men. *30 March 2016.*

Present: Members of the livestock association in Msinga. The focus session was organised by Mdukatshani to discuss the impacts of drought and relief interventions, specifically on men as livestock and crop farmers.

Representatives of government/public utilities

Meier, Kevin. *8 March 2016.*

Manager: Planning Services, Umgeni Water. Telephone and email interviews. Drought impact on water provisioning. Pietermaritzburg.

Moseki, Chris (Dr). *17 March 2016.*

Specialist Scientist, Department of Water and Sanitation: Climate Change portfolio; UNFCCC Co-Chair for the Research and Systematic Observation Agenda Item. Johannesburg.

Viljoen, Ilse. *2 March 2016.* Scientist (Production), Planning, Department of Water and Sanitation. Email interview.





**" OF MY 13
CATTLE, I
HAVE ONE
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*Quotes from focus group
with male livestock owners,
MSINGA, KWAZULU-NATAL*



OXFAM
South Africa

Braam Park Office Park, 33 Hoofd Street, Johannesburg, South Africa

Tel: +27 11 100 4610 Email: info@oxfam.org.za

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