

## THE SOUTH AFRICAN STORY

Abbreviated case studies from the book: “Boiling Point: Exploring South Africa’s vulnerable communities”

By Leonie S Joubert<sup>1</sup>

The Republic of South Africa, with its population of 47.9 million, is something of a microcosm of the global divide between rich and poor, developed and developing, North and South. While a small percentage of its populace enjoys the affluence of the developed world, the vast majority do not, with nearly half the country living close to the breadline.

South Africa has been described as one of the most unequal societies in the world. While half the country survives on about \$2 a day, the senior managers of the country’s largest and most influential companies here earn more than 700 times the state-regulated minimum wage. In spite of the country’s bullish economy, there are nevertheless more poor people in the country now than there were 15 years ago.

What emerges so starkly from this context is this: those communities who are least responsible for the pollution resulting in shifting climatic trends are the ones most vulnerable to the resulting impacts.

Our natural environment is already showing evidence of change, signs which can be linked to global climate change.



Since 1960, South Africa has seen an average temperature rise of about 0.5°C, while the water temperature along the coast is up by 0.25°C in that same period. During this time, more warm days were counted, and fewer cool days. Trends in rainfall are more difficult to find.

The Western Cape Province, of which Cape Town is the provincial capital, is showing evidence of the climate change signal much more strongly, although climatologists cannot explain this phenomenon. An average increase of between 1°C and 2°C in places, more than double the national average, has been measured here. This could be responsible for the shrinking footprint of winter-rainfall wheat, although market forces probably helped. Apple farmers have seen an increase in sunburn and uneven ripening, undermining export fruit quality. A measurable increase in coastal wind speed is driving evaporation and drying out soils, making potato farmers of the Sandveld, along the Cape West Coast, perilously vulnerable.

These trends are expected to continue into the future, with a rise of about 1°C along the coast and upward of 4.5°C in the northern interior of the country. The country will see a steep decline in rainfall on the western side of the country, with the desert pushing south towards Cape Town. This will have dire implications for one of the most botanically diverse and rare plant communities on the planet, the Cape Floral Kingdom.

The east of the country will see a seasonal increase in rainfall, but concentrated into heavier rainfall events resulting in greater runoff and flooding. This will not spare the region from the impact of drought events.

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<sup>1</sup> Leonie S Joubert is a Cape Town-based science journalist and author of *Scorched, South Africa’s changing climate* which earned an Honorary 2007 Sunday Times Alan Paton Non-Fiction Award (see [www.scorched.co.za](http://www.scorched.co.za)).

Leonie specialises in climate change, biodiversity, natural history, agriculture and energy. She is the 2007 Ruth First Fellow, and is narrating the stories of five families, in different communities in South Africa, who are regarded as vulnerable to climate change for various reasons.

This research was made possible by the Ruth First Trust, the Wits Journalism School and the Heinrich Boll Foundation.

Email: [leonie@scorched.co.za](mailto:leonie@scorched.co.za)

The extreme weather events which are entirely natural to South Africa will be amplified by rising temperatures, meaning that heatwaves, droughts and floods will come with greater frequency and intensity.

## THE TEA MAKER

Hendrik Hesselman is one of many subsistence farmers in the *Suid Bokkeveld*, about 400km north of Cape Town, who, while landless and impoverished, is now making a tiny living by farming herbal tea. Now, at 71, “Uncle Hen” is chairman of a newly-formed Heiveld Co-operative of sharecroppers that is using this harsh land to break into the swelling *rooibos* (red bush) tea market.



Bush tea, an herbal health tea that is exploding on the international market, grows exclusively in the Cederberg Mountains of the Western Cape Province and the *Suid Bokkeveld* has it growing wild. This is at the northern-most extent of the tea's natural range.

Most of their tea is cultivated but they also pick through the natural vegetation for rare wild *rooibos*. Both crops are exported to the European Union where the market happily spends its pin money on premium organic, Fair Trade and wild tea.

The changes to this community are subtle. One member of the Heiveld Co-operative might talk about sending a family member to hospital, formerly a healthcare “luxury”. Another sports a set of dentures, while a third arrives at co-op meetings in a “new”, if slightly weathered truck. All have their first bank accounts. These are quiet signals that an impoverished community, whose education often does not extend beyond grade four, is dipping its toe into a viable mainstream market and profiting from it.

Already the rising temperatures, increased drought and altered rainfall patterns which climate change modellers predict for the region are happening. Shifts in range of the quiver tree, the iconic tree aloe of the desert (*Aloe dichotoma*), confirm what the climate models are predicting, that the desert will press south, sweeping aside species as it goes.

Worse still, it appears to have been doing so for decades, and the *rooibos* plantations of the *Suid Bokkeveld* are directly in its pathway.



## A LITTLE BIT OF NOTHING

Ernest Titus was born into a century-old fisher tradition along the Cape West Coast, one of the biologically richest and most productive of the world's fisheries. This is an “artisanal” fisher community, where its fishers fall somewhere between classic subsistence fisher and full scale commercial fisher.



Many use their catch to put food on the table but will also sell a bit of surplus to boost the family income.

But now, in a situation where many people want access to this chronically over-exploited fishery, government policy has design a quota permit system which traditional fishers like Titus feel has all but pinched off the access to a natural space which they assumed was part of their back yard.

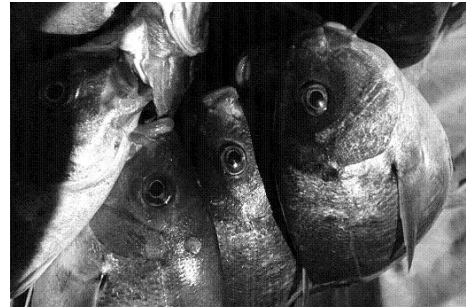
Now shifting climatic trends could potentially disrupt both line fishing and lobster catches in a fishery that, in sectors,

is close to collapse. Thermometers have already captured a 1°C rise in sea surface temperatures around the coast since the 1940s and wind speeds are up an average of about 1 to 3 km per hour.

There is considerable debate around whether or not dwindling fisheries of the West Coast are due to chronic over-extraction of fish – 18 line fish species have collapsed due to over harvesting, according to a national State of the Environment Report, while another four are regarded as over-exploited. But rising temperatures could be pushing them south and east, much like the quiver tree is shifting; or it could simply be a natural and little-understood cycle.

Every few years, the coast sees mass rock lobster walk-outs, which occur when low-oxygen events in the seawater force the lobsters into the shallow inter-tidal zones. Once the tide retreats, the animals are left stranded on the beach.

These events appear to be on the increase. A complex interplay of shifting wind patterns is a likely culprit. During the 1990s, five mass walkouts occurred, leaving over 2 200 tons of lobster rotting on the shore. Three of these were the worst on record.



## BREAD BASKET



Albert Whitfield, a maize farmer in the Free State province, said the 2006/2007 season started well.

“Just after planting, the maize was growing prolifically. It was beautiful!” he exclaims from behind the wheel of his truck. “And then the rains cut off, they just stopped. January and February were very dry!”

An early season crop estimate anticipated five or six tons of maize per hectare, above the three to four ton average for the farm. But after the failed rains, the final harvest amounted to two tons per hectare.

South Africa is a breadbasket for the sub-continent, producing over 50 percent of the staple food, maize, that is consumed by itself and its neighbour. Yet 92 percent of the maize footprint is farmed in the dry-land method, because the country is so prone to aridity and drought. There is

simply not enough water to increase maize yield through irrigation.

This year the worst drought in 50 years hit the maize belt, resulting in a maize shortage which rippled out through the entire food supply chain. By the close of 2006, food price increases were already outpacing inflation. The price on a basic food basket was up by 7.8 percent, but for many basic food items, the increase was two or even three times that. Maize meal was up by nearly 30 percent, cooking oil by nearly 20 percent, red meat and chicken by 11.8 percent.

White maize sold for a minimum of about US \$88 per ton in 2004 on the South African Futures Exchange. This year it is expected to reach as high as US \$294 per ton as a result of the recent difficult growing season.

It is the economically marginal who really feel the pinch when crops are down, not because there's no food available, but because a food shortage pushes up the price, making them unaffordable to a country's poor.

Climate change modelling anticipates that natural weather events will be amplified by rising CO<sub>2</sub>: increased frequency and intensity of heatwaves and droughts; greater inundations of rain; increased evaporation; drying out of soils – all written into the future of South Africa's bread basket.



And this in a country where the growing need for water and staple food will outstrip the country's ability to supply them. According to the national State of the Environment Report, South Africa's demand for water will exceed available resources by 2025, if not sooner. The population of South Africa, Swaziland and Lesotho will climb from 47.9 million today, to about 70 to 90 million by 2035. In order to meet the region's growing food requirements, an annual three per cent increase in production is needed, but climate models predict annual yields will decline by between ten and twenty per cent by 2050.

