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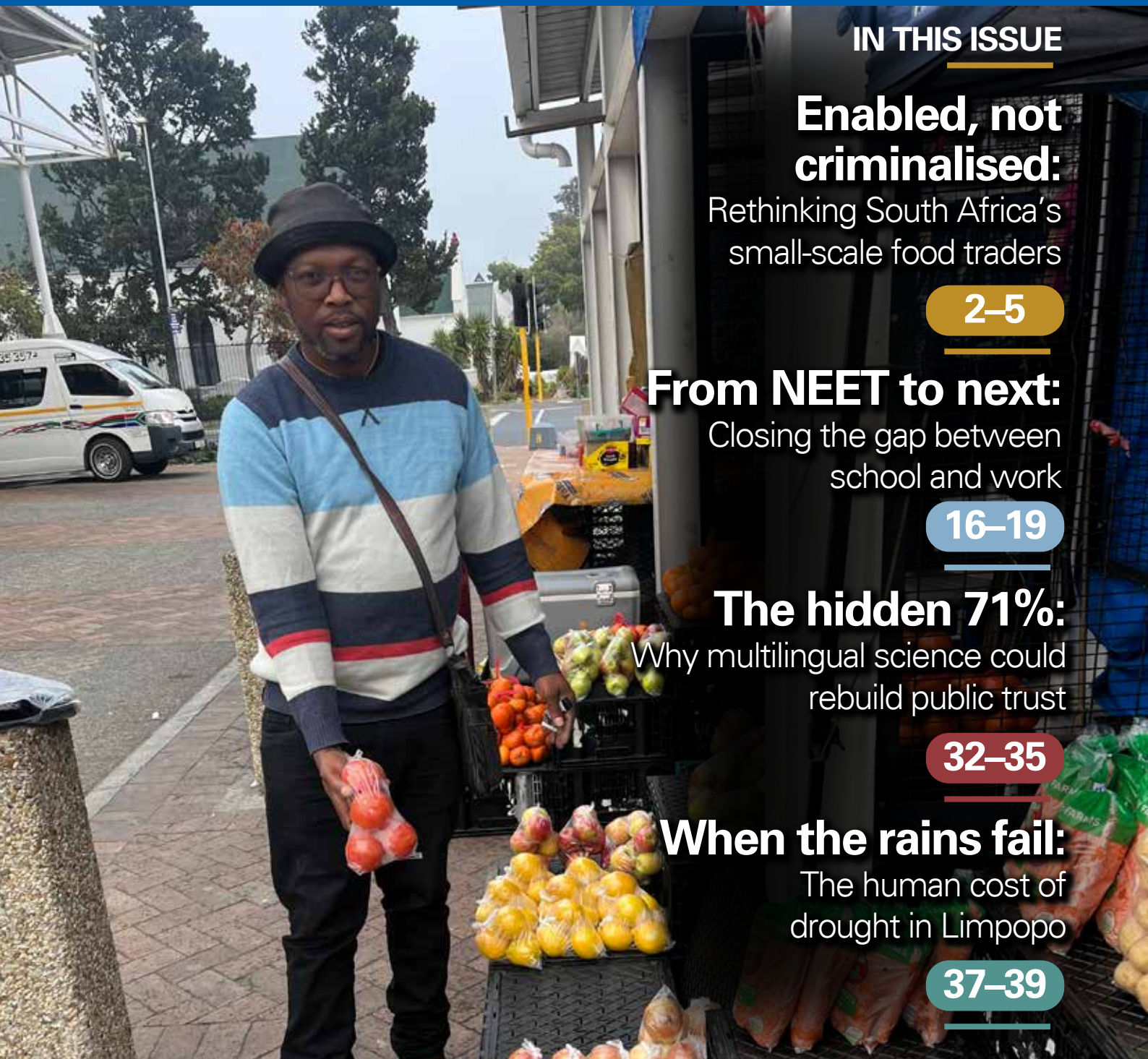
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EDITOR'S NOTE

By Antoinette Oosthuizen

One month into South Africa's spring season, we near the end of a brutal year. The war in Iran sent fuel prices spiking, tariffs disrupted trade, and floods in Nepal and Tibet – triggered by a glacier collapse – wiped out entire valley communities.

Those events bring into focus a question that runs through much of this edition of the *HSRC Review*: how do the structures we create – markets, policy, institutions, language and technology – shape our ability to live, work, participate and thrive? And how do forces beyond our control, such as environmental and climate change, alter the conditions in which we live?

Our first article argues that small-scale food actors – street vendors, distributors and urban farmers – are central to household food security and poverty alleviation and should be supported and consulted rather than criminalised. A related article on food loss and waste examines what happens in other parts of the food system where edible food is discarded while millions go hungry.

One study asks whether industrial development can realistically generate jobs in remote rural districts. Another traces the mismatch between education and employment, leaving young people stranded, neither earning nor learning. We also ask what happens when poverty, violence, climate shocks and disrupted schooling accumulate, eroding a young person's belief that they have a future at all.

Our science communication experts examine how language and access shape who gets to participate. National Science Week reaches some South Africans but not others. South Africans often hold traditional and modern worldviews together rather than choosing between them. And while nearly three-

quarters of our scientists are multilingual, most still communicate only in English, limiting the reach of their work.

Engagement with communities is equally important when addressing environmental challenges. Drought in Muyexe Village, Limpopo, is far more than an agricultural crisis, deepening the vulnerability of people least able to absorb another shock. The case for conservation, meanwhile, needs to account for the people living alongside wildlife: protecting biodiversity will be difficult to sustain where communities face human-wildlife conflict while also struggling for livelihoods and food.

Our researchers also continue to examine how healthcare affects people's lives. The COVID-19 tobacco ban offered a rare opportunity to study whether restricting access changes behaviour. Self-testing and mobile-supported diagnosis could bring care closer to people who are not reached by clinics, but only if these approaches are trusted. And when parents and healthcare workers were asked what a child health chatbot should do, they emphasised that such tools are useful only when they are trustworthy, inclusive and adapted to local realities.

Finally, as we mark Heritage Month in September, we feature an HSRC study of women who have undergone initiation and the meanings they attach to it. The study offers a deeper understanding of a cultural institution too often described from the outside. By centring Bakopa women's own accounts of *koma ya basadi*, it reminds us that people are not simply shaped by the cultural and institutional structures around them. They interpret, negotiate and give meaning to them in their own ways.

The *Review* team

Small-scale food actors are key to poverty alleviation and food security:

They should be enabled and consulted, not criminalised

Strengthening small-scale agri-food systems in urban, peri-urban, and rural settings in South Africa is crucial for achieving household food security and alleviating poverty. At a recent HSRC webinar, experts acknowledged the roles of small-scale actors such as street vendors, food distributors and urban farmers, and discussed ways to support and learn from them.

Between 2021 and 2023, the HSRC's [National Food and Nutrition Security Survey \(NFNSS\)](#) gathered data from over 34 500 households across all nine provinces, providing a comprehensive picture of food access and nutrition in South Africa. Using internationally recognised indicators, the study found that 63.5% of households were food insecure to some degree. Of these households, 17.5% experienced severe food insecurity, often going without food or reducing meal sizes. Many also consumed nutritionally inadequate food, relying heavily on low-cost, nutrient-poor staples.

The findings also revealed geographic disparities, with some provinces and districts facing acute food crises. While researchers emphasised the need for clearer communication on nutrient-rich foods,

dietary diversity and meal planning, the findings also pointed to structural challenges in how food is produced, accessed, distributed and consumed.

Key recommendations included investments in local food systems, including food markets and food banks located near vulnerable communities. The survey also emphasised the need to strengthen informal food economies by supporting traders and small businesses to improve food safety, quality and shelf life.

To explore these dynamics, the HSRC hosted a webinar, *Strengthening Small-scale Agri-food Systems to Enhance Household Food Security & Poverty Alleviation in South Africa*, in February 2026.

FOOD SECURITY

Small-scale food actors are key to poverty alleviation and food security

63.5%

of South African households experienced food insecurity TO SOME DEGREE



Nearly **2 out of 3** households do not have reliable access to enough safe and nutritious food

17.5%

of South African households experienced SEVERE FOOD INSECURITY



Almost **1 in 5** households experienced severe food insecurity



Small-scale food actors – including smallholder farmers, informal traders and local food producers – are essential to building resilient and food-secure communities.





A food system built on dispossession

Dr Marc Wegerif, senior lecturer in development studies at the University of Pretoria and principal investigator at the DSI-NRF Centre of Excellence in Food Security, presented a diagnosis of South Africa's food system, with half the population unable to afford a healthy diet. The [NFSS 2024](#) also found that 28.8% of children (1–5 years) were stunted. Nearly 68% of women were overweight or obese, which Wegerif linked to the aggressive marketing of unhealthy foods.

"We must look at the power relations across that food system, and who the winners and losers are. It's not just a neutral system; it has power and differences and inequalities in it," Wegerif said. The dominant food system in South Africa today grew out of a history of land dispossession, the deliberate destruction of black agriculture, and extensive state support for white-owned, large-scale commercial agriculture. "It was deliberately created," he said.

After apartheid, ownership concentration deepened, with international investment firms and large corporates tightening their grip on the value chain from farm to shelf. The logic of that system, Wegerif argued, now fits together: vast monocrop farms feed massive distribution centres owned by a handful of supermarket groups. High levels of computerisation, mechanisation and artificial intelligence reduce the need for labour and lock out small-scale farmers who cannot meet the entry requirements of concentrated supply chains.

"The food system is not working well for a lot of people, as we see from the levels of food insecurity and unemployment," Wegerif said.

Street traders are a system, not a gap filler

Wegerif's research across Johannesburg, Soshanguve, Mahikeng and other sites shows that the answer is not

aspirational – it is already happening on the streets. Drawing on price data collected twice monthly over two years, his team found that street traders were cheaper than supermarkets on every item measured.

He mentioned examples of street vendors undercutting a supermarket chain by 22% on onions, 60% on tomatoes, 85% on potatoes and 120% on cabbage. The formal sector's margin on fresh produce was 179% versus 76% for street traders. Traders often absorb a portion of wholesale price increases rather than pass them on because they know their customers cannot afford it.

"The substantial savings contribute directly to people being able to access these foods, and therefore food and nutrition security," Wegerif said.

The municipal fresh produce market system tells a similar story. The Johannesburg Market's 2023 turnover was R23.5 billion. Between 50% and 60% of that goes to informal traders. That is more than R12 billion a year in fresh produce flowing through the hands of small-scale actors, who then typically apply a 70% markup.

"They might all look small, but collectively this is a substantive part of the food system that is making food more accessible," Wegerif said.

Beyond price, street traders extend accessibility by selling in small, affordable units (a R5 bag of potatoes rather than a 10 kg sack), offering interest-free credit to trusted customers and bringing food directly to people's doors via trolley delivery.

Municipal bylaws are criminalising livelihoods

Prof. Mjabuliseni Cleopas Ngidi, associate professor in food security at the University of KwaZulu-Natal (UKZN)'s Centre for Transformative Agricultural and Food Systems, examined the regulatory barriers that small-scale food actors face. He said these actors – including street traders, urban farmers, home processors, cooperatives, micro-aggregators and distributors – feed millions of urban households and sustain livelihoods, particularly for women and youth. Yet, they are systematically excluded by municipal regulations. "For me, this is a governance issue ... created by how municipalities have been designing their bylaws, planning their systems and enforcing the practices," Ngidi said.

Bylaws are designed for large, formal enterprises, not for subsistence-scale food producers. Restrictive zoning prohibits traders from operating where they and their customers live and work. Health and safety regulations impose the same compliance burden on a street vendor as on a corporate manufacturer, including costly certifications that may consume a significant share of a trader's monthly income.



Informal food trader Ntombekhaya Paka selling cow feet during the COVID-19 lockdown in Port Elizabeth (Gqeberha), South Africa, 11 April 2020. Photo: Mkhusele Sizan, CC BY-ND 4.0, GroundUp

"Before you even sell one tomato, you are already illegal where you are, because the municipal zoning does not permit you to be selling where you are selling," Ngidi said.

Small-scale food actors are rarely consulted when bylaws, integrated development plans or spatial development frameworks are drawn up – they are treated as an afterthought, or even lawbreakers. The result is a fragmented food system that misses major opportunities for employment creation and food security.

Ngidi argued that municipalities are best placed to act because they control bylaws, spatial planning, infrastructure budgets and local economic development.

Enabling steps include differentiating health compliance requirements by risk and scale; integrating food systems into development and spatial frameworks; protecting peri-urban farmland from development; and investing in infrastructure such as sheltered stalls, cold storage lockers, and access to water and sanitation.

Rethinking the definition of 'informality'

The webinar also raised a debate over whether 'informality' should be better defined, or whether it impedes good policy and research. Ngidi said inconsistent municipal definitions reinforce punitive attitudes towards so-called informality.

Wegerif challenged the framing. "I would challenge this very notion of informality. A spaza shop is very different from a street trader. Some street traders in the Joburg CBD are registered with the municipality. Why do we call them informal? The term is pejorative by its very nature. It is defining a particular group by what they're not. That has built into it an assumption that what we need is this so-called 'formal' – and there's a particular imagery about what formal is, linked to our modernisation ideas of what a modern city looks like, which come from colonial pasts."

UKZN researcher Dr Mbalenhle Gwacela echoed the argument. "Language shapes dignity," she said, suggesting 'independent vendors' as a more respectful and accurate alternative. "This is their livelihood, this is the way in which they contribute to the local economy – and to a bigger economy. There is nothing informal about that."

HSRC researcher Kukhanyile Mali said inconsistent definitions produced fragmented government responses or even haphazard responses, further excluding actors who do not fit neatly into any category. He pointed to Gauteng during the G20 as a recent case where municipal actions against informal traders were later [ruled unlawful in court](#).

Wegerif believes each actor in the food system should be understood for what they are and how their operation works rather than be defined by what they

are not. A street food seller's food safety logic, for example, is based on speed and personal knowledge of suppliers, not cold chains and traceability audits. "If they know the guy next door with the chickens and they slaughter the chicken in the morning, and cook it by late morning for lunch, they don't need refrigeration. That's a different logic of safety. If you try and apply the safety requirements designed for a Shoprite supply chain, it's totally different, and we have to understand these actors' way of organising and see how we work with that."

Why this research matters

South Africa's food insecurity crisis reflects a food system that concentrates wealth rather than nourishment. Nutrition messaging alone cannot fix a system in which half the population cannot afford a healthy diet.

This HSRC webinar showed that an alternative food system already exists in South Africa's streets, markets and peri-urban farms. Documenting and quantifying this system through research provide the evidence needed for policy change.

The findings can help municipalities redesign bylaws that criminalise livelihoods. They can also inform

spatial planning, protect peri-urban farmland, and support investment in affordable infrastructure – sheltered stalls, cold storage and water access – that would unlock greater economic participation and improve food quality. It strengthens the case for closer links between small-scale traders and farmers.

As Wegerif put it: "This is a pragmatic rather than utopian reimagining. In the streets, in imperfect situations ... what we need is solutions that work in the real world."

The researchers agreed that small-scale food actors are not a problem to be managed or a gap to be tolerated until formal systems catch up. They constitute an alternative food system that creates livelihoods, keeps prices down and feeds communities. The research and policy task is to understand how it works and learn from it.

As Ngidi concluded: "These actors are not a by-the-way kind of economic activity. They are central to the economic activities of this country."

Authors and acknowledgements

This article by HSRC science writer Antoinette Oosthuizen is based on a webinar, *Strengthening Small-scale Agri-food Systems to Enhance Household Food Security & Poverty Alleviation in South Africa*, hosted in February by the HSRC's Research Hub 4. The hub's work on governance and stability provides context for understanding the broader conditions that enable or hinder food systems and informal economic activity in South Africa.

We thank the webinar presenters, Dr Marc Wegerif (University of Pretoria) and Prof. Mjabuliseni Cleopas Ngidi (UKZN), as well as the HSRC's Dr Sikhulumile Sinyolo, webinar facilitator.

Please contact Dr Peter Jacobs for more information about the HSRC work in food and nutrition security: pjacobs@hsrc.ac.za

Click here to read the HSRC's [National Food and Nutrition Security Survey \(NFNSS\)](#) report.

Further reading:

Food survey shows need for area-specific interventions in SA (*HSRC Review*, February 2024)
[Municipal support key to igniting already dynamic informal food trade system](#) (*Engineering News*, February 2026)

South Africa's fight against food loss and waste:

Reflections from a June 2026 national multi-stakeholder dialogue

While millions of South Africans face food insecurity, tonnes of edible food continue to be discarded every day, often ending up in landfills. Insights from a national food loss and waste workshop reveal why changing consumer behaviour, strengthening partnerships and keeping organic waste out of landfills must become national priorities and core components in the country's food and nutrition security strategy.

According to a Council for Scientific and Industrial Research (CSIR) 2021 [report](#) and a HSRC 2025 [study](#), significant quantities of food that could have been consumed are lost or wasted annually across South Africa's food value chains. At the same time, many households continue to struggle with food insecurity and have limited access to nutritious food. This contradiction formed the backdrop of discussions at the South African Food Loss and Waste Initiative (SA FLWI) Signatory and Stakeholder Workshop Series held in Johannesburg on 2 June and Cape Town on 4 June 2026.

The workshops brought together stakeholders from government, the private sector, research institutions and civil society organisations to explore practical solutions for reducing food loss and waste (FLW) across the food value chain in South Africa. Among the participants were representatives of the Department of Trade, Industry and Competition (the dtic); the Department of Forestry, Fisheries and the Environment (DFFE); the HSRC; the CSIR; the Consumer Goods Council of South Africa (CGCSA); the Waste and Resources Action Programme (WRAP); the Global Methane Hub, leading food retailers Spar and Woolworths and manufacturers such as Tiger Brands.

Dr Vandudzai Mbanda and Sisonke Mtyapi presented findings from an HSRC [study](#) that examined a nationally representative survey on household food waste in South Africa. The HSRC presentation focused on the prevalence, drivers and possible solutions for reducing household food waste in the country. The workshop was comprehensive, with other presenters touching on initiatives being undertaken by actors, particularly in retail, to reduce food loss and waste in their daily operations. Overall, the workshop discussions highlighted a broader reality: reducing food loss and waste requires coordinated

action from producers, retailers, researchers, government, policymakers and consumers alike. Platforms that bring together key stakeholders on FLW are important for contributing to further improvements of South Africa's food and nutrition security policies, particularly the [2025–2030 Strategy for Reducing Food Losses and Waste](#).

The HSRC Household Food Waste Study

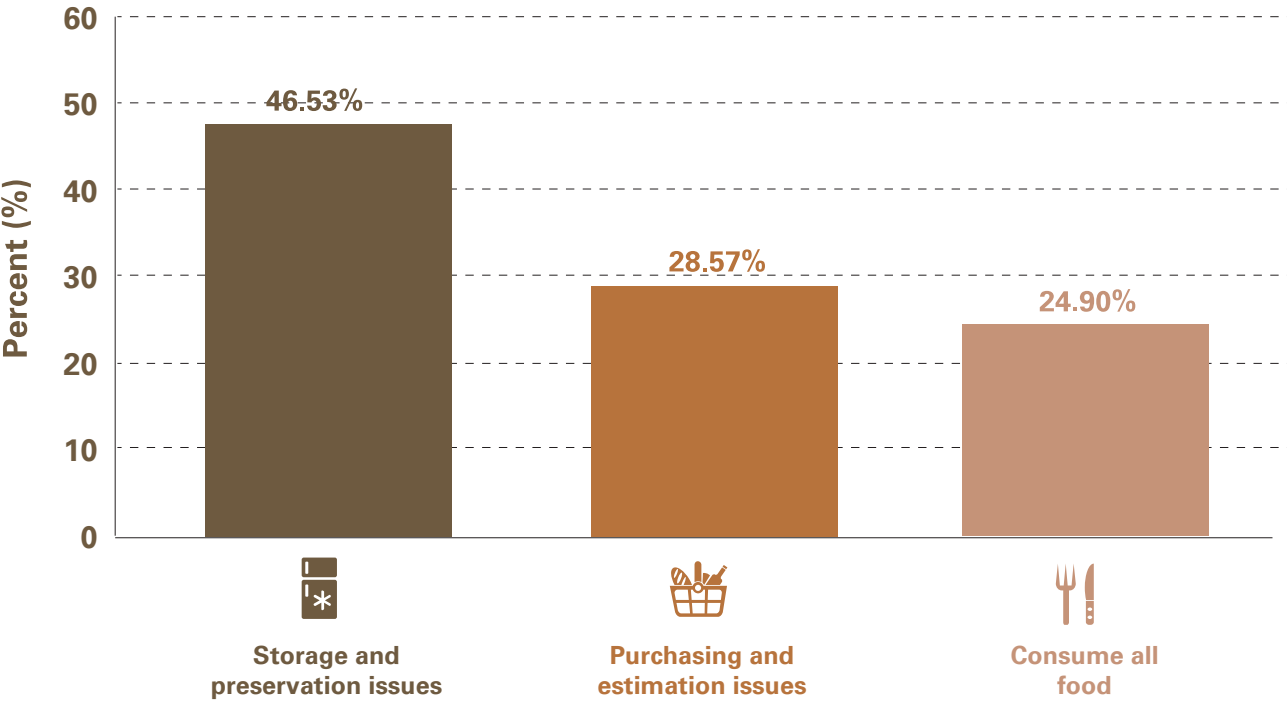
The findings from the HSRC Household Food Waste Study aligned closely with discussions from several workshop presenters. A recurring issue was consumer confusion regarding food date labels. The findings show that about a quarter of the respondents interpret 'best before' dates as indicators of food safety rather than food quality. This might mean that a substantial amount of edible food ends up being discarded. Improving public understanding of food labelling could therefore play a meaningful role in reducing avoidable household food waste.

The main factors that contribute to food waste highlighted in the HSRC study include the lack of suitable storage facilities, preservation limitations and overbuying, as shown in Figure 1. Some presenters also mentioned the same issues. Consumers often purchase more food in response to promotions and bulk-buy offers and on impulse. However, food bought without a clear consumption plan frequently spoils before it can be eaten. Better shopping habits, including meal planning and purchasing according to actual household needs, could significantly reduce food waste at source. These behavioural factors are particularly important because they highlight opportunities for change that are within the reach of ordinary consumers. Small actions undertaken by millions of households can collectively have a substantial impact on reducing waste.



Photo: Joshua Hoehne on Unsplash

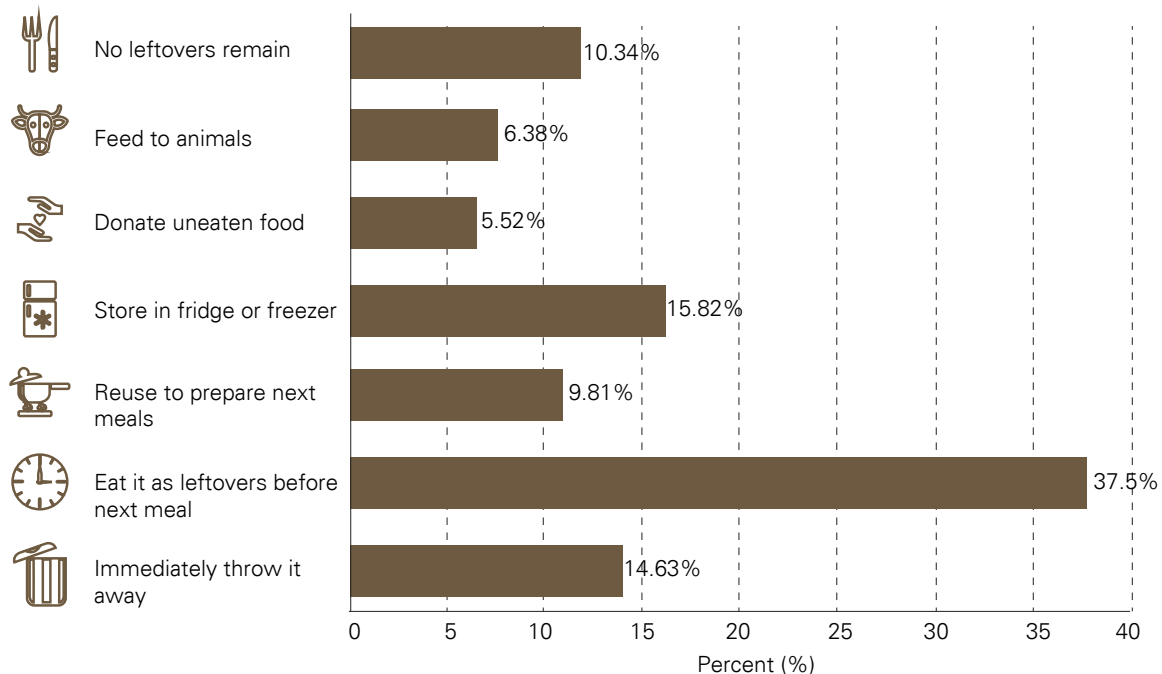
Figure 1. The main reasons for households not to consume all their food (number of valid observations = 2,895)



Source: HSRC 2025 Household Food Waste [Study](#)

Moreover, the HSRC study found that leftovers within many households are not discarded, as shown in Figure 2. Promoting meal planning, food storage practices and creative reuse of leftovers could help households that still discard leftovers save money while reducing waste.

Figure 2. How households manage leftovers (number of valid observations = 3,027)



Source: HSRC 2025 Household Food Waste [Study](#)

A synthesis of key discussion points

The main points discussed at the two-part workshop series included the high volumes of food discarded in South Africa; the contradiction between FLW and hunger; opportunities to use surplus food to reduce hunger among vulnerable people; behavioural and structural challenges, such as the lack of electricity and refrigerators for preserving food; the buy-in of some major retailers to SA FLWI strategies; and the dangers associated with disposing food in landfills.

The workshop reinforced the strong relationship between food waste and food insecurity. In a country where many households experience hunger and struggle to access nutritious food, reducing avoidable food waste should be viewed as part of a broader food security strategy. Several speakers highlighted the growing pressure that food waste places on landfill sites. As discussed in the [2025–2030 Strategy for Reducing Food Losses and Waste](#) and a United States Environmental Protection Agency [report](#), when food waste is disposed of in landfills, it decomposes and releases methane. According to [Jones and others \(2023\)](#) and [Rabbi and Kovács \(2024\)](#), methane is a greenhouse gas that has a significantly higher warming potential than carbon dioxide over the short term. The environmental consequences of food waste, therefore, extend far beyond the food itself. Wasted food also represents

wasted water, energy, labour and land resources used throughout production, processing and distribution.

A practical case discussed was the Western Cape Province's efforts and commitment to diverting organic waste from landfills. It highlighted that preventing waste and finding productive uses for unavoidable organic waste must become central to South Africa's transition towards a more sustainable, less wasteful economy.

One of the most important lessons from the workshop was that infrastructure and policy interventions alone will not solve the problem. Human behaviour remains a critical part of the food waste challenge. Encouragingly, the workshop demonstrated a growing commitment among stakeholders to address the challenge collectively. Participants from government departments, retailers, food manufacturers, research organisations and non-governmental organisations shared examples of initiatives aimed at improving management of their food stocks, redistributing surplus food, strengthening consumer education and measuring food waste more effectively. Although important actors from some parts of the value chain (primary and logistics phases) were not represented, discussions reflected a shared understanding that collaboration is essential for meaningful progress.

Conclusion

As policymakers pursue measures such as diverting organic waste from landfills and organisations continue to develop innovative waste reduction initiatives, there is growing momentum towards significant change. However, achieving lasting impact will require action from all stakeholders.

The SA FLWI workshop provided an important platform for dialogue, knowledge-sharing and collaboration. For example, one of the most valuable takeaways was the strong alignment between research evidence and the experiences of practitioners working across the food system. The CGCSA encouraged stakeholders present at the workshop to formally join the SA FLWI – joining existing members from government, academia and civil society that include the dtic, DFFE, CSIR and WRAP – to help shape debates and contribute to the national effort to reduce food loss and waste in the country.

Research contacts and acknowledgements

This *Review* article was written by [Dr Vandudzai Mbanda](#) (senior research specialist) and [Sisonke Mtyapi](#) (senior researcher) in the HSRC's [Equitable Education and Economies](#) research division. For more information about this work, please contact [Dr Vandudzai Mbanda](#) at vmbanda@hsrc.ac.za.

The Food Loss and Waste study was conducted in 2025 by the [Equitable and Ecological Socioeconomic Transformation](#) team in the HSRC's [Equitable Education and Economies](#) research division, coordinated by [Dr Vandudzai Mbanda](#).

Special acknowledgement: We extend our sincere thanks to the [CGCSA](#) for inviting us to the SA FLWI June 2026 workshop series.



Photo: [Magnific](#)

Industrialisation in remote districts: A pathway to rural jobs?

Creating jobs in rural areas has been central to South Africa's rural development vision and policy agenda throughout the post-1994 era, with several policies calling for job generation through rural industrial development. Yet patterns of economic activity over 2010–2024 raise questions about how far jobs can be grown this way. Drawing on historical evidence, HSRC experts weigh up which economic sectors are most likely to expand the demand for workers in rural municipalities.

Photo: [Conrad Marshall](#), Pexels

Since the late 1990s, South Africa's rural development policies and strategies have been geared towards scaling up industrialisation, such as building agro-processing plants and other factories in rural areas. The National Development Plan (NDP), the Comprehensive Rural Development Programme (CRDP), the Agriculture and Agro-processing Master Plans (AAMP) and the more recent Integrated Rural Development Sector Strategy (IRDSS) see future rural spaces as localities of expanded economic opportunity, job creation and industrial enterprise ([DLRRD 2025](#)). Investing in rural industrial development and related public infrastructure, these policies promise, will be key to unlocking the prosperity and transformation of rural economies.

In 2025, the Department of Land Reform and Rural Development (DLRRD) commissioned the HSRC to generate evidence that supports the objectives of the government's [Integrated Rural Development Sector Strategy \(IRDSS\)](#), a plan for rural socioeconomic change in the country that was revised in 2025. The following insights are drawn from several HSRC desktop reports submitted to the DLRRD.

Jobs from rural industries: What the ideal models promise

Promises of creating jobs by building factories near farms and mines go back centuries. The underlying premise is that siting processing and manufacturing close to the agricultural resources they depend on will stimulate local economies and, in doing so, create jobs. A sugar or flour mill sits beside the sugarcane, wheat or maize farms, for example, or a milk or cheese factory near the cattle farms it draws from.

Manufacturing plants are also expected to yield spinoffs, particularly local complementary industries such as transport, storage, packaging, and repair and maintenance. As the backward and forward linkages between farms and factories strengthen, the gains from higher productivity and added value should boost rural development. If rural industrialisation

happens as envisaged, markets will expand and external investment will flow into the local economy, absorbing more of the rural workforce.

Rural manufacturing industries: quick evidence check

Whether the government's strategy of job creation through rural industrialisation is achievable in practice depends on many factors, but economic development research across the Global South is clear: the industrial transformation of rural areas is costly and needs decades to deliver the jobs outcomes that theoretical models promise.

Historical data can reveal future industrial possibilities from past and present experience. Given the evidence, what are the prospects for manufacturing-driven jobs growth in rural areas, and what kinds of high-tech or labour-intensive factories have been built there in recent years? A rapid analysis of two basic indicators helps answer this:

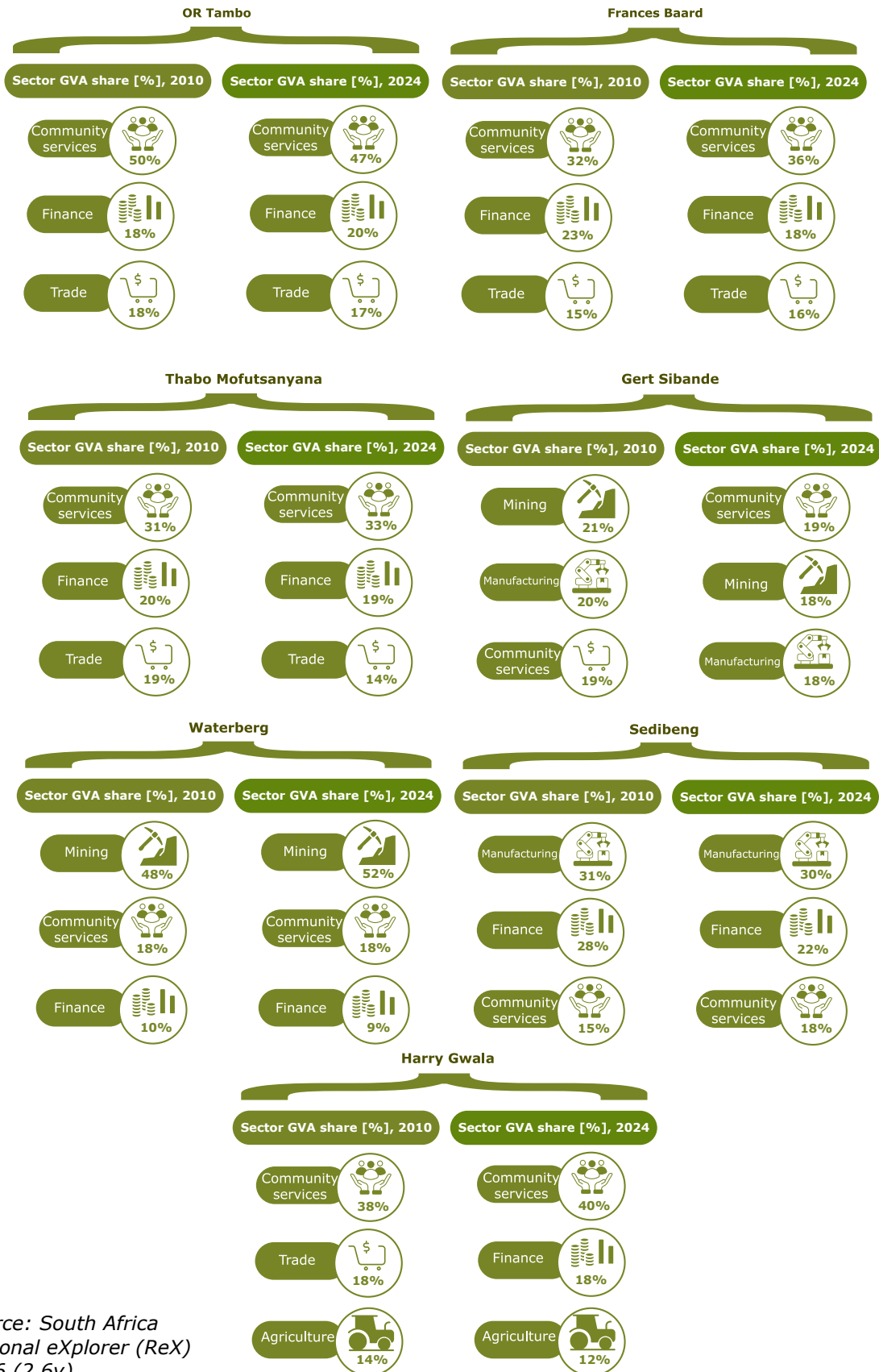
1. **Changing composition of economic sectors**, captured as gross value added (GVA), which refers to the unique contribution of a sector to the district's economic output
2. **Share of employment** per sector

On average, the employment share of a sector should be more or less the same value as the sector's weight in gross value added. If a sector's employment share is substantially lower than its value added to output, then this gap is likely due to the use of productivity-boosting technologies, which suggests low labour absorption in that sector.

Figure 1 reports the first indicator: gross value added per sector across seven priority rural districts. It shows the value-added shares of each district's three leading sectors in 2010–2024 – sectors that together account for 60–90% of total economic output. The question, set against the policy objectives outlined above, is whether manufacturing and agriculture feature among those driving sectors.

Photo: Alexandar Little Wolf,
Magnific

Figure 1. Gross value added (GVA) share [%] for top 3 economic sectors per district, 2010, 2024



Source: South Africa
Regional eXplorer (ReX)
2686 (2.6y)



Photo: Noel McShane, Pexels

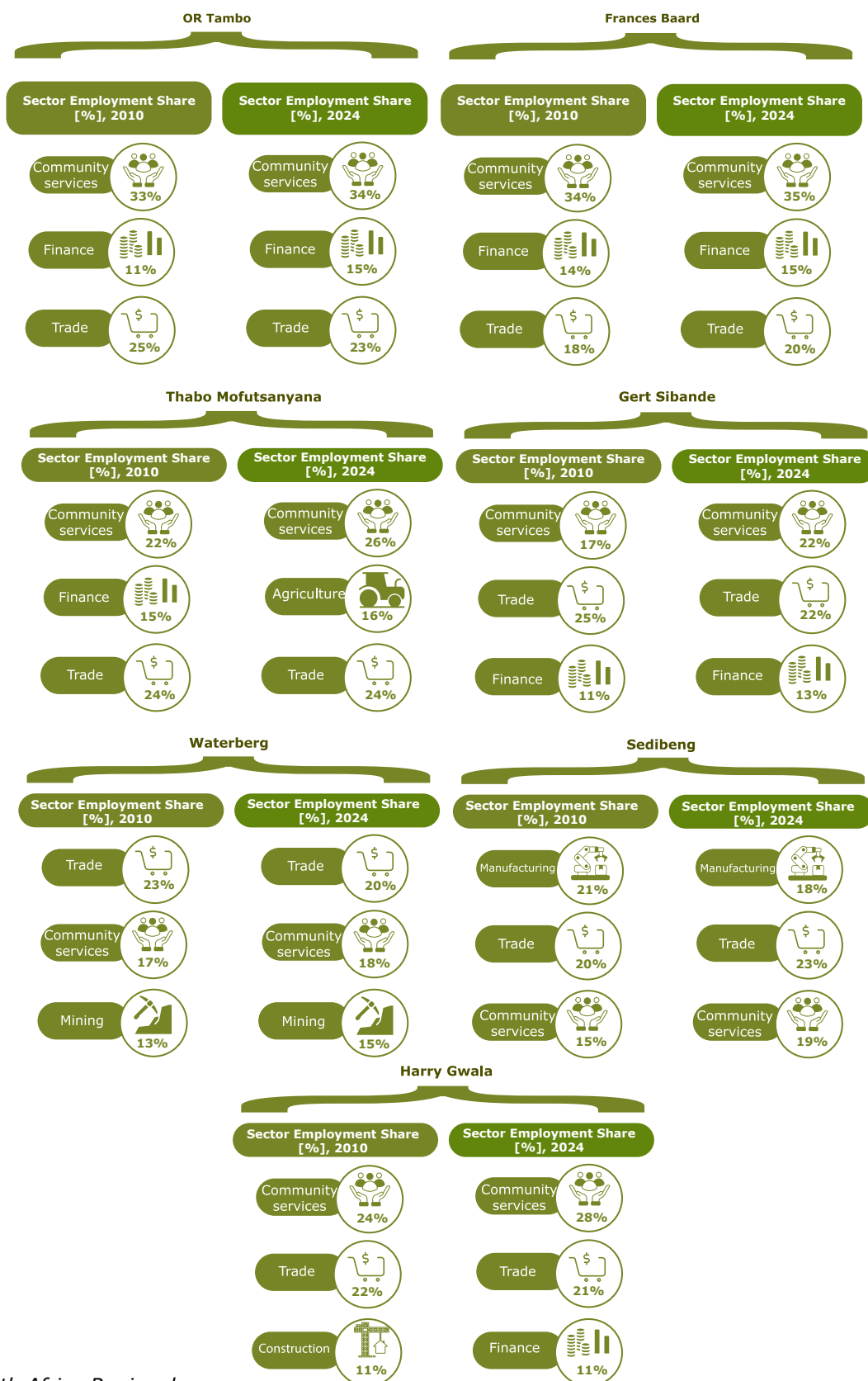
In Figure 1, manufacturing features in the top three of only two districts: Sedibeng (Gauteng) and Gert Sibande (Mpumalanga). Even there, the trend gives little cause for celebration. Manufacturing's share in Sedibeng stagnated around 30%, while in Gert Sibande, it fell from 20% in 2010 to 18% in 2024.

The data reveal little about the sector itself – what the factories make (food, textiles, motor cars) or how labour intensive they are. The clearer message from Figure 1 is that services such as banking, retail trade and community services drive economic output across these districts. Only rarely do the natural resources sectors, mining and agriculture rank among the leading engines of GVA.

Rural industrial jobs patterns

The second indicator, employment share, asks which districts have seen notable demand for factory workers, given the dismal picture of rural manufacturing. As Figure 2 shows, manufacturing jobs ranked among the top three job-generating sectors in only one district: Sedibeng.

Figure 2. Employment share (%) for top 3 economic sectors per district, 2010, 2024



Source: South Africa Regional eXplorer (ReX) 2686 (2.6y)

Sedibeng’s industrial employment may also benefit from strong linkages and spillovers from the country’s dominant manufacturing hub, Johannesburg. Yet Figure 2 still clouds the outlook: Sedibeng’s manufacturing workforce share shrunk from 21% in 2010 to 18% in 2024. The likely cause is investment in labour-saving technology, which cuts demand to fewer, more highly skilled workers.

In other districts, such as Gert Sibande, factory workers make up only a small fraction of the workforce. The message from Figure 2 is clear: the leading source of rural employment is the expanding services economy – retail and community services. Secure work as an agricultural or mine worker, by contrast, is increasingly unlikely. Mining and agriculture keep declining as drivers of rural jobs, and apart from modest growth in the Waterberg district (mining’s employment share rose from 13% to 15% between 2010 and 2024), there is no sign of a reversal.

SEDIBENG’S JOBS ARE SHIFTING
Employment shares by broad sector in Sedibeng District Municipality



Key insights

The data examined here underscore the mismatch between policy, which pins rural job creation on industrialisation, and the reality of manufacturing decline. We still know too little about the factories operating in rural areas – what they make and how many workers they employ relative to high-tech machinery. Also, service sectors rather than industry dominate rural economies and are where most new jobs are being found. Finally, the shrinking farming and mining sectors offer ever fewer prospects of secure rural work.

Authors and acknowledgements:

This *Review* article was written by Dr Peter Jacobs (senior research director) and Dr Kukhanyile Mali (research specialist) in the HSRC’s Equitable Education and Economies division. Jacobs is a co-PI of an HSRC team commissioned by the Department of Land Reform and Rural Development (DLRRD) to generate evidence that supports the objectives of the government’s Integrated Rural Development Sector Strategy, the government’s plan for rural socioeconomic change, which was revised in 2025. The article brings together learnings from several HSRC desktop reports submitted to DLRRD. Sisonke Mtyapi and Vandudzai Mbanda prepared the data tables discussed in this article. For more information, please contact Jacobs at pjacobs@hsrc.ac.za. For more information, please contact Jacobs at pjacobs@hsrc.ac.za.

From NEET to next: Building pathways from education to employment

Imagine a young person living in one of the smaller towns surrounding South Africa's economic centres. They have completed school, are motivated to work and are eager to contribute to society, yet struggle to secure meaningful employment because their education, skills and local opportunities are poorly aligned. Their experience is not only an individual challenge but reflects broader structural weaknesses in South Africa's education-to-employment systems. Practical solutions to these weaknesses, including ways to support youth in their job searches, were the focus of the Cape Winelands Knowledge Sharing Festival held in Paarl earlier this year.



Drumming entertainment provided by young people of Paarl during the Cape Winelands Knowledge Sharing Festival

South Africa continues to grapple with a persistent youth unemployment crisis. According to [Statistics South Africa](#), the official unemployment rate in the 15–34 age group remains exceptionally high at 47.4%, and many of these people also fall within the discouraged work-seekers classification. The crisis is driven by a complex interplay of factors, including skills mismatches, limited work-experience opportunities,

slow economic growth, and spatial inequalities that restrict access to labour markets.

Particularly concerning is the number of young people who are [not in employment, education or training \(NEET\)](#), a group that faces significant barriers to economic participation. In the first quarter of 2026, 37.6% of people between the ages of 15 and 24 were in this group. Graduate unemployment further



Nonkululeko Dlamini (HSRC), Rev. Michael Wilderman (Social Youth Employment Outreach Programme) and Akhona Gumede (HSRC)

illustrates the scale of the challenge, having surged [from 5.8% in 2008 to 11.8% in 2023](#) and continued to rise. Tertiary qualifications no longer guarantee a pathway into employment, signalling a growing disconnect between education and labour market demand.

Addressing this crisis requires more than isolated interventions. It demands stronger alignment between education, skills development, employers, communities and the government, supported by evidence that identifies what works in different contexts.

Moving beyond identifying the problem

This shift from diagnosing challenges to implementing practical solutions formed the basis of discussions at the Cape Winelands Knowledge Sharing Festival, held in Paarl in March 2026. Hosted by KC Radio with the HSRC and other partners, the event brought researchers together with representatives from government, tertiary institutions, businesses and community organisations. Young people were also in attendance and actively participating, in keeping with the festival's theme, "Unlocking youth opportunities through innovative collaborative partnerships".

The festival reflected the HSRC's commitment to engaged research, which places communities at the centre of knowledge generation and solution development. Rather than viewing research as an activity removed from practice, engaged research seeks to connect evidence with implementation by working alongside communities and decision-makers.

Recent HSRC research supports this approach. The [paper](#) "Hidden spatial inequalities in youth unemployment in Gauteng: need for place-based interventions" argues that tackling unemployment requires solutions tailored to local contexts and socio-economic conditions, rather than one-size-fits-all policies.

Bridging fragmented systems

While South Africa has introduced initiatives to address youth unemployment, including the Expanded Public Works Programme and the Presidential Youth Employment Intervention, an HSRC [policy brief](#) contends that many focus on short-term employment rather than sustainable career pathways.

Better coordination between education providers, employers and policymakers is clearly needed to ensure young people acquire skills that match labour market needs and emerging economic opportunities. At the festival, participants emphasised that improving coordination across sectors is as important as introducing new programmes.

"What makes the conference unique is that it gives life to the ABCG model of local governance – academia, business, community and the government working together to share ideas and lessons on how to implement sustainable youth development," said Dr Harlan Cloete, Chairperson of KC Radio.

Engaged research in practice

The festival demonstrated how engaged research can create opportunities beyond academic knowledge sharing. Rather than focusing exclusively on presenting research findings, the programme created opportunities for dialogue between researchers, practitioners and young people. Workshops, panel discussions and case studies explored topics such as digital entrepreneurship, skills development, community media, innovation and public-private partnerships.

Presenters showcased practical initiatives already supporting youth employment, including learnership programmes, digital skills training, entrepreneurship support and community-based enterprises.

The festival also served as a forum for young people to engage directly with organisations, ask questions and establish professional relationships that may

lead to future employment opportunities. Sessions on career development, networking and digital professional identities encouraged participants to strengthen their visibility on platforms like LinkedIn, and to develop skills valued by employers.

For the HSRC, facilitating these conversations forms part of its broader mandate and reflects the purpose of engaged research: moving beyond papers that sit on shelves to convene the people who can act, synthesise the evidence that should guide them, and help build the connections that make collective action possible. Dr Konosoang Sobane, a chief research specialist at the HSRC, described the approach as an example of research that actively contributes to social development.

“This is what engaged research looks like – partnership with communities and engaging society on an equal footing. It is a co-created space that generates new knowledge and empowers people.”

Evidence that informs action

One of the HSRC’s significant contributions at the festival was the soft launch of its [Evidence Map of Engaged Research](#). This searchable online database brings together research projects from across the developing world to identify what has worked when researchers and communities collaborate. Rather than simply cataloguing projects, the map highlights patterns that can inform future policy and practice.

A key finding is that initiatives involving communities from the outset are more likely to achieve meaningful outcomes, including skills development and job opportunities. It is also apparent from the evidence that young people are often excluded from decision-making, even in programmes designed to support them.

Making this evidence publicly accessible provides policymakers, practitioners and researchers with a valuable resource for designing interventions grounded in demonstrated success rather than assumptions.

Maintaining the momentum

Among the festival’s most important achievements was its ability to foster relationships across sectors. The participants did more than exchange ideas; they began building the institutional partnerships necessary to address youth unemployment collectively. These partnerships represent an important step towards overcoming the fragmented nature of existing responses. The challenge now is to sustain the momentum by strengthening these partnerships, sharing evidence across initiatives, and expanding programmes that have demonstrated measurable impact.

A major outcome of the festival is the plan announced by Prof. Lynn Hendricks of Stellenbosch University to establish a collaborative research hub, with the HSRC set to play an active role in its development. The proposed hub will focus on bridging the gap between research and impact by equipping young people with practical research, digital and problem-solving skills, while supporting community-driven projects to open pathways to employment and local economic opportunities.

Discussions following the festival also identified several practical activities, including CV-writing workshops, career-readiness training and other initiatives designed to improve young people’s ability to present themselves more effectively to employers and access available opportunities.

As South Africa continues to confront persistent youth unemployment, initiatives that combine rigorous evidence with genuine collaboration offer an important way forward. The Cape Winelands Knowledge Sharing Festival illustrated how research can move beyond identifying problems to supporting coordinated action and helping build more inclusive and sustainable futures for young people.



Akhona Gumede and Kirsten Robin at the Cape Winelands Knowledge Sharing Festival



Chris van Rooyen (Department of Social Development), Dr Konosoang Sobane (HSRC), Ganief Hendricks (Deputy Minister of Social Development), Akhona Gumede (HSRC), Nonkululeko Dlamini (HSRC), Dr Harlan Cloete (Chairperson of KC Radio (107.7) and Prof. Lynn Hendricks (Stellenbosch University)



Prof. Nico de Klerk, CEO of the StreetBiz Entrepreneurial Mindset Foundation



Seamus Clancy, the head of public sector, healthcare and not-for-profit sales at LinkedIn

Research contacts and acknowledgements

This Review article was written by Akhona Gumede, Thatohatsi Madumo, Yoliswa Sikhosana and Nonkululeko Dlamini, with input from Dr Konosoang Sobane.

The Cape Winelands Knowledge Sharing Festival was hosted by KC Radio, the HSRC, Stellenbosch University, the Department of Social Development, LinkedIn, Amazon, Drakenstein Municipality, the Learning Trust, In2Food, the Cape Peninsula University of Technology, HortGro, the South African Council for Businesswomen, Sisterhood Cape Winelands and the Auditor-General of South Africa.

For more information about this work, please contact Akhona Gumede at engagedresearch@hsrc.ac.za.



Photo: [Cottonbro Studio, Pexels](#)

What happens when young people stop believing they have a future?

Poverty, unemployment, political instability, economic shocks, violence, climate change and educational disruption are usually treated as separate problems, rarely for their compounding, collective impact. HSRC researchers explored this through a qualitative sub-study of 40 young people, nested within Asenze – a longitudinal study that has tracked a KwaZulu-Natal cohort from childhood to adulthood since 2008. Entering adulthood, this group was hit by three successive crises from 2020. What determined whether they overcame them, the study found, was not material resources but identity resources: agency, belonging, self-worth, purpose and the capacity to aspire.

Between 2020 and 2022, young people in the Valley of 1000 Hills in KwaZulu-Natal (KZN) endured three nationally declared states of emergency: the COVID-19 pandemic, which disrupted schools and livelihoods; the [July 2021 social unrest](#) or 'looting', which had severe consequences for local communities, businesses and the broader economy; and the devastating [floods of April 2022](#), which followed the heaviest seasonal downpour that KZN had seen in over 60 years. Collectively, these shocks threatened residents' livelihoods and took a heavy toll on mental well-being.

The HSRC conducted a qualitative study (2024–2026) with 40 young people and 20 of their caregivers to understand the impact of these compound crises on their lives and mental health. Interviewed in 2025, aged between 19 and 23, the young people reflected on the shocks they had experienced between grades 9 and 12. Researchers wanted to know why some maintained their mental health, well-being and resilience better than others and found that the richness of the participants' inner worlds played a significant role.

Navigating polycrisis

At the start of lockdown, many participants were in high school and endured an abrupt shift to hybrid learning and self-study. Limited digital access and inadequate contact with teachers made it hard to keep learning while schools stayed closed:

“Like everything changed. I had to adjust to new way of doing things ... studying by myself without having help from the teacher. I know that I am an audio learner ... I understand better if something is explained to me. We were crowded at home because everyone had stopped working ... I did not maintain my pass mark.”

~ Asanda (20)

Then came the looting and chaos of July 2021, which made it hard for many to find food and essentials:

“I remember that time. Bread prices had increased to R30 from about R23; it affected my family and me too because we were struggling. We are not a wealthy family – we're just surviving with whatever we get. So, when the price of food increased, that made me feel like, 'What if today maybe we are not going to eat.' My mom is the only provider in my family. We are a family of seven.”

~ Sipho (22)

Distrust in communities grew, and when tensions boiled over, they spilled into violence. Thabani (22) described this period feeling “as if apartheid was returning; a lot of things happened.”

In 2022, their community was underwater, with homes washed away, community roads collapsing, and farmlands damaged:

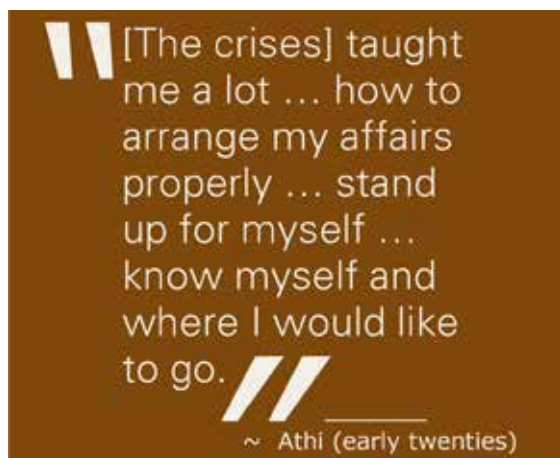
“The house we lived in was blown away. So, we moved and built a shack where we temporarily lived ... We lived there until December. It did damage and even damaged our neighbours' house.”

~ Thabani (22)

Collectively, these events threatened livelihoods and the psychological well-being of the young people. Yet the intensity with which individuals experienced each crisis differed. Some were able to maintain their mental health better than others. The HSRC found that those who upheld a sense of self-worth, purpose, belonging and agency – so-called ‘identity resources’ – sustained their psychological well-being better throughout.

Purpose

Young people who maintained aspiration and hope for a better future, describing themselves as “go-getters” who could beat the odds, continued to “fight for their futures” despite hardships. They navigated each crisis with greater resilience:



Participants without this sense of purpose – most often those not in employment, education, or training (NEET) – described feeling “stuck”, “stagnant”, and increasingly diminished as the crises compounded:

"You see, it seems like my life is stagnant. [Because] at the time I am sitting and not studying ..."

~ Athambile (21)

"I feel drained. People put pressure on you, especially because I'm at home and not in school ... like it's my choice ... the way people talk makes me feel bad."

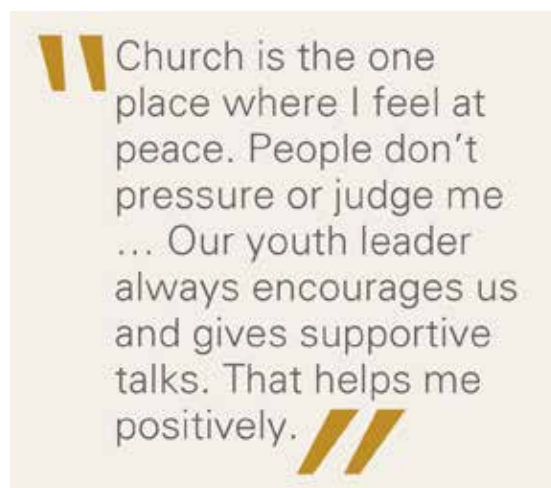
~ Nothemba (20)

Without purpose, hopelessness proliferates, and resilience dwindles. In unequal societies, where material resources are unevenly distributed and so many are trapped in poverty, aspiration is not only a luxury; it is a survival strategy.

Belonging

A sense of belonging to formal or peer groups, churches, and family and community networks fortified some young people against the full force of each crisis, providing socio-emotional scaffolding. Churches, in particular, were frequently described as vital sites of psychosocial support:

[Church] is a place I love because I am free when I am there ... we meet up with other people, and we're able to chat, because we may ultimately share knowledge and contribute to each other's growth on other matters.



Young people with stronger connections to such systems felt less isolated. Those with weaker connections were more likely to report isolation; young men, in particular, were most affected.

Agency

Agency shaped how young people responded to instability. Agency, or the “[navigational capacity to act on your own](#)” as HSRC sociologist Sharlene Swartz describes it, converts purpose to action and helps sustain belonging. Without it, even those with a strong sense of purpose and belonging can become paralysed by circumstance. Participants with a greater sense of agency, despite ongoing disruptions and uncertainty, could still imagine their future selves as better off, and worked towards that future by hustling, searching for employment, creating informal livelihoods and pursuing learning opportunities:

"Because I try everything to make a living ... I want to do it myself because I see that it's tough. My mom isn't employed, and she can't afford to send me to school, so I need to make a plan. That's why I do online surveys, use different apps, and am part of stokvels."

~ Nothemba

"I want to become something so that people see me, not the way they see me now. I still want to rebuild the house that collapsed because of the floods. I want the space to be restored to how it was before."

~ Akho

Crucially, agency is particularly vulnerable to structural inequality. Its uneven distribution across participants – shaped by gender, class, educational

access, networks and geography – illustrates the dependence of this resource on social enablers. Young people cannot act on their own circumstances if they lack the means to do so.

Conclusion

Collectively, purpose, belonging and agency are resources central to young people's psychological well-being amid compounding crises. They are essential to building a positive, coherent self-identity, which acts as a psychological buffer against negative risk-taking. This was best illustrated by NEET participants, who, in the absence of institutions or communities actively reaffirming their value, struggled most to navigate each crisis.

10 National priorities

1. Strengthen families and support parents and caregivers
2. Reduce infant and child deaths
3. Eliminate HIV transmission to babies
4. Improve child nutrition
5. Boost early learning and brain power
6. Prevent disability and promote inclusion
7. End abuse, violence and exposure to harmful substances
8. Improve adolescent access to health, including sexual and reproductive care
9. Ensure quality education and link school-leavers to work
10. Build teenagers' identity, agency and connectedness

www.holdmyhand.org.za 0600 411 1111

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Participants who felt seen and connected, through stronger ties to support systems, fared better. Fortunately, these identity resources are shaped not only by material resources but also, perhaps fundamentally, by the quality of young people's relationships and the environments in which they live. Where crises compound, the question is whether young people survive them materially, and whether they emerge still believing they are worthy of a future. Much of that rests on whether society actively affirms their worth. Feeling seen and valued offers real psychological protection, and while crises remain disruptive, they are not as devastating as they would be otherwise.

South Africa cannot foster social cohesion or economic recovery while millions of young citizens feel unseen, stuck or disposable. The [National Strategy to Accelerate Action for Children](#) (NSAAC) recognises this, calling for a whole-of-society approach to child and adolescent well-being, with one of its 10 national priorities focused on adolescent identity, agency and connectedness.

The Hold My Hand Accelerator for Children and Teens – a public-private collaboration between the DG Murray Trust and the Presidency – is driving this priority forward. Protecting and valuing adolescent identity, as well as encouraging the resources that build a positive self-concept, are the work of all of society. Identity is the foundation on which development is built for the individual and the nation.

Research contacts and acknowledgements

This *Review* article was written by Dr Alude Mahali, a research director in the HSRC's Equitable Education and Economies (EEE) research division, with input from Abigail Wood, coordinator of communications, research and networking at the Hold My Hand Accelerator for Children and Teens. For more information about this work, please contact Mahali at amahali@hsrc.ac.za.

The project research team included Mahali (EEE), as well as Drs Kombi Sausi and Ntombizodumo Mkwana from the HSRC's Developmental, Capable and Ethical State research division. Appreciation must also be extended to the University of KwaZulu-Natal Asenze study team for their foundational support and guidance: Prof. Chris Desmond, Kathryn Watt and Furzana Timol.

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Making science visible: Media, public engagement and National Science Week

Effective science communication is key to enhancing public understanding and engagement in science, technology, engineering and mathematics (STEM), and the media plays a critical role. Using data from South Africa's National Science Week between 2022 and 2024, this piece explores how traditional and social media were used to communicate science and promote the event.

Science communication, broadly, is the use of relevant skills, media, activities and dialogue to build public awareness, interest and understanding of science. In South Africa, cultural and linguistic diversity, high levels of illiteracy and poverty, and unequal access to resources and information – particularly in remote rural communities – make effective science communication urgent and challenging. These constraints mean that a single communication strategy cannot effectively reach the whole population.

South Africa is emerging as one of the most technologically advanced countries in Africa and is striving to solidify its standing among the world's leading nations in science and technology. Despite [numerous challenges](#), there is a strong interest and belief that South Africa can make a significant contribution to scientific advancement and technological change, both in Africa and globally. Realising this vision requires a concerted effort to foster a scientifically literate and [engaged](#) society. The South African Department of Science, Technology and Innovation ([DSTI](#)) is committed to promoting participation in STEM and cultivating such a society.

The media plays a critical role in science communication by conveying scientific knowledge to local and global audiences, shaping public perspectives and empowering individuals to participate in discussions about issues that affect their lives. South Africa's science media [landscape](#) is under strain, with shrinking budgets and staff cutbacks meaning fewer specialist science reporters

and limited space for science stories in mainstream and community outlets. At the same time, there is growing pressure from policymakers, research funders, institutions and society for science media coverage to become more accessible by focusing on everyday concerns.

National Science Week: South Africa's annual STEM celebration

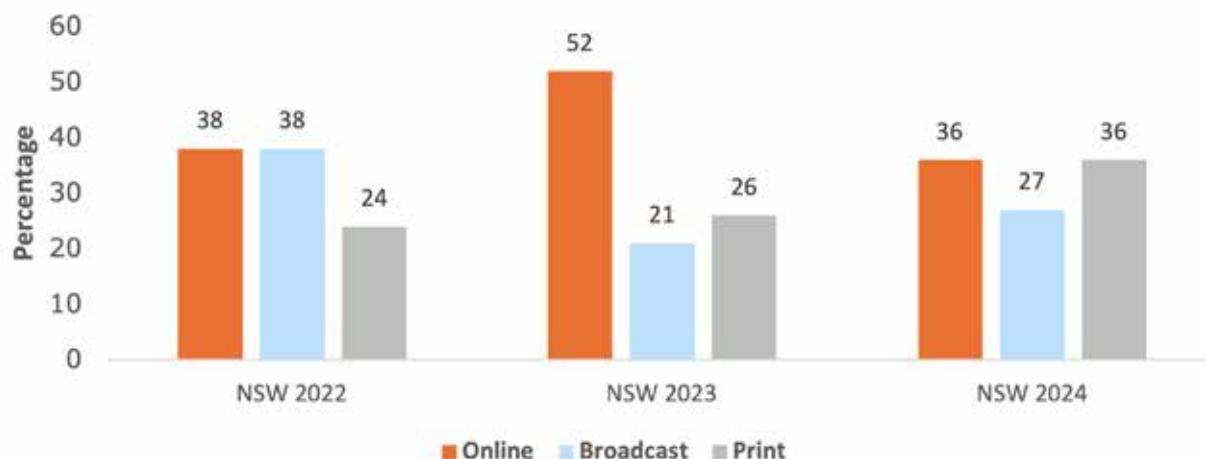
South Africa's annual National Science Week (NSW) has become one of the country's most important science communication platforms since its inception in 2000. The DSTI-led initiative aims to engage and inspire people of all ages by showcasing STEM fields and career opportunities. Over the years, the event has undergone significant changes in its format and target audience. After COVID-19 forced its cancellation in 2020, the event was held in a virtual format in 2021, and a hybrid model was adopted from 2022, combining online sessions and in-person engagements across the nine provinces. Its most significant change came in 2026, when NSW was expanded into a month-long National Science Month.

The reform was grounded partly in the HSRC's own research. Announcing the inaugural month on 29 June 2026, Science, Technology and Innovation Minister Blade Nzimande pointed to the department's 2011 Ten-Year Review of National Science Week and to independent studies – among them the HSRC's 2022 South African Public Relationship with Science Survey – as evidence that the programme needed greater scope and geographical reach. He also framed the shift as a response to fast-moving



A cameraman focuses on his equipment, capturing city life in Kempton Park, Gauteng, South Africa. Researchers say reinvesting in broadcast media will help extend the reach of science communication in South Africa. Photo: Thobile Nhlapo, Pexels

Figure 1. Traditional media use in NSW science communication (2022–2024)



Source: [HSRC](#)

global technologies such as artificial intelligence, quantum computing, green energy and advanced biotechnology. National Science Month was launched on 4 July 2026 at the Vaal University of Technology's Southern Gauteng Science and Technology Park in Sebokeng, under the theme "Science, Technology and Innovation Are for Everyone". Running across all 31 days of July, it organised activities around 14 thematic areas – from human health and climate change to science journalism and the decolonisation of knowledge systems – and opened with an exhibition of 132 stands and more than 100 exhibitors drawn from universities and the department's science entities.

NSW 2024: media coverage and organisational use

Media coverage of NSW 2024 followed a predictable arc, with online platforms dominating pre-event communication, followed by a surge across all channels during the event and then subsiding post-event. Radio and television coverage lagged behind online and print throughout but was lowest during the pre-event period, when building public anticipation matters most.

A survey of implementing organisations following the event revealed that the most-used communication platforms were organisational newsletters and email, followed by Facebook, posters and flyers, and radio. LinkedIn, a platform with significant reach among professionals and potential science champions, remained heavily underutilised. The reliance on newsletters and institutional channels suggests NSW activities are being promoted primarily to existing audiences, limiting the event's capacity to reach and inspire new ones.

Traditional media: coverage trends

Traditional media encompasses mass communication through print (newspapers and magazines),

broadcast (television and radio) and online platforms subject to editorial oversight. A review of the three NSW cycles between 2022 and 2024 recorded 98 traditional media data points, comprising six print, 39 broadcast (nine television and 30 radio), and 53 online data points, making online media the most frequently used traditional media channel. Its use rose from 38% in 2022 to 52% in 2023, before decreasing to 36% in 2024, possibly reflecting a reduction in participating organisations. A total of 41 organisations were recorded in 2022, 47 in 2023 and 31 in 2024.

Print media showed a steady upward trend, rising from about a quarter of coverage in 2022 and 2023 to just over a third in 2024.

Despite television and radio remaining the [most trusted](#) and widely accessed platforms for many South Africans – particularly those in lower-income groups and rural areas – broadcast media use fell by 17 percentage points from 2022 to 2023, with a modest 6 percentage point recovery in 2024. This raises significant equity and reach concerns, as reduced reliance on broadcast media effectively excludes those communities most in need of science communication.

Social media: growth, reach and risk

A total of 608 social media data points related to NSW were observed across platforms between 2022 and 2024, spanning X (Twitter), YouTube, Instagram and Facebook. X had the highest NSW coverage in 2022, followed by a sharp decline in 2023 and a partial recovery in 2024. YouTube coverage remained minimal, likely due to prohibitive data demands – a significant barrier in a country where mobile data costs are disproportionately high relative to income. Facebook recorded the largest growth, consistent with its position as the most widely used social media platform in South Africa. Instagram coverage followed a similar upward trend.

Although [social media](#) has become more widely adopted as a science communication tool due to its increasing influence, there are concerns that the quality of information disseminated is lower than that of traditional media, with fake news and misinformation spreading most rapidly through high-engagement posts.

For an event designed to build public awareness and encourage engagement with science, operating in a misinformation-prone environment presents a strategic challenge, since public receptiveness depends heavily on trust. The displacement of traditional media by largely unregulated social media has weakened the gatekeeping function once performed by specialist science journalists and editors.

Improving event-related science communication

The following recommendations would enhance communication around science engagement events:

- **Reinvest in broadcast media:** Television and radio, particularly in local languages, remain the most equitable channels for reaching rural and low-income South Africans. Broadcast coverage must be actively rebuilt through dedicated media partnerships.
- **Expand professional network engagement:** LinkedIn's reach among professionals, academics and policy influencers makes it a high-value, underused channel for increasing awareness among those who can champion science within

their own institutions.

- **Develop targeted social media content:** Centrally coordinated, platform-specific content would enable consistent and accurate communication.
- **Target new audiences:** Promoting events through community radio, local newspapers, schools and community centres would help fulfil the mandate of making science accessible to all.
- **Monitor and respond to misinformation:** A social-media monitoring and rapid-response network should be established, assigning primary monitoring and fact-checking responsibilities to organisations with the relevant technical expertise. For example, the HSRC would focus on social science, risk and communication matters, the Council for Scientific and Industrial Research on science and technology topics, and the Medical Research Council on medical issues. These organisations would maintain real-time monitoring for misinformation in their domain and produce short, evidence-based corrections and guidance.

This analysis of media trends is vital for assessing how events like NSW are promoted and for identifying strategies to extend their reach in future. As the public's relationship with science continues to be shaped by the media, ensuring National Science Month will be visible, credible and accessible to all South Africans through appropriate channels is not simply an effective communication strategy; it is a science equity imperative.

Research contacts and acknowledgements

This *Review* article was written by Dr Thando Tenza and Sylvia Hannan, chief researchers in the HSRC's Equitable Education and Economies (EEE) division. It is based on findings from the 2022, 2023 and 2024 National Science Week Monitoring and Evaluation study, funded by the Department of Science, Technology and Innovation (DSTI).

Over the past few years, the core research team members on the Monitoring and Evaluation of the National Science Week were Dr Vijay Reddy, Sylvia Hannan, Dr Thando Tenza, Yoliswa Sikhosana, Dr Samuel Fongwa, Petronella Salal, Hlumisa Xakaza and Dr Thembinkosi Twalo.

For more information about this work, please contact Tenza on ttenza@hsrc.ac.za and Hannan on shannan@hsrc.ac.za.



Damara Healer and Leader meets San Activist Piet Berendse over a late night cup of tea to discuss the various traditional knowledge systems and healing herbs found locally, Karoo, South Africa, 2019.
Photo: Kgara Kevin Rack, Wikimedia Commons

Traditional science and technology, modern views: Insights from the SAPRS Survey

Traditional knowledge is often assumed to be distinct from modern science, and part of a fading cultural legacy. Data from the HSRC's 2022 South African Public Relationship with Science Survey fundamentally challenges this assumption. South Africans, particularly young and educated black South Africans, do not see traditional and modern science as opposites, but hold both worldviews simultaneously. This Heritage Month, the data tells a story worth celebrating.

Ask young South Africans about their heritage, and their responses may include traditional home remedies passed down through generations as much as a reliance on modern medicine. The recognition and integration of multiple worldviews extend from modern medicine to cultural pride in traditional song and support for the Springboks or Banyana Banyana. Before the popularisation of modern science, communities at the southern tip of Africa developed rich and sophisticated systems for surviving, adapting and thriving within their environments.

These traditional science and technology (S&T) systems are dynamic and evolving bodies of knowledge that are continually tested, verified and refined through close interaction with the natural environment in fields such as agriculture, medicine, climate and natural resource management. This knowledge has supported human development and provided solutions to contemporary social challenges,

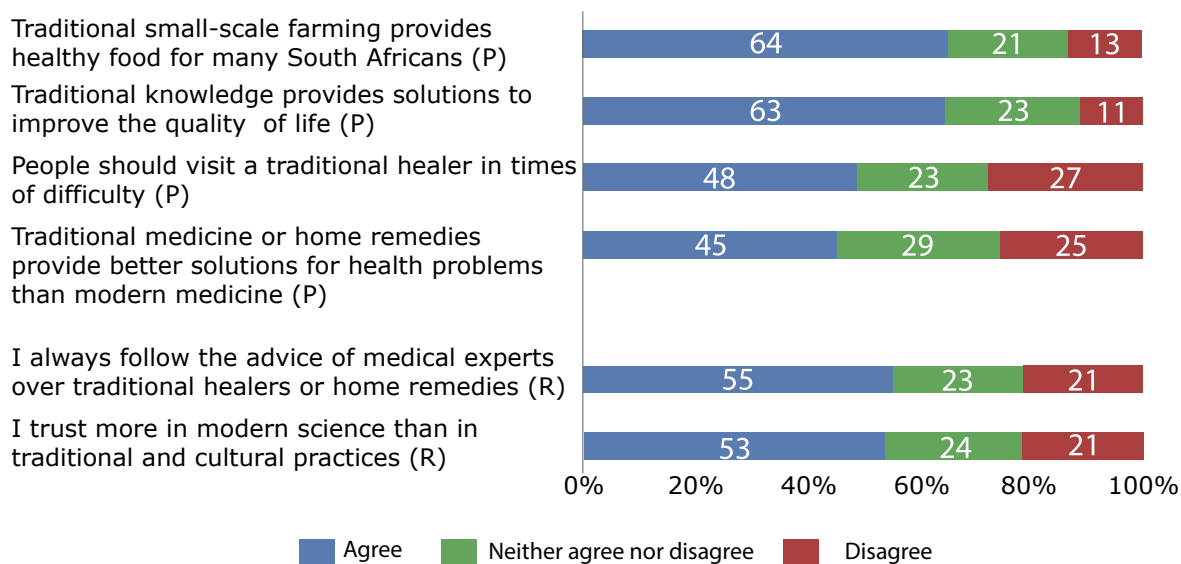
enabling indigenous populations to live sustainably within their ecosystems for centuries, often long before modern science began documenting and engaging with these communities and practices.

However, traditional knowledge is at times seen as a waning tradition, acknowledged and preserved by only older, rural or less formally educated populations.

The HSRC's 2022 South African Public Relationship with Science (SAPRS) Survey explored the public's relationship with traditional S&T among a representative national sample of 5 960 South Africans. The SAPRS Survey defined traditional knowledge 'as knowledge and skills that have been passed on from generation to generation within a community'. Drawing on the survey data, this piece examines the public's relationship with traditional S&T, with a particular focus on the black South African population group.

Photo: Pavel Danilyuk, Pexels

Figure 1. Views of promise (P) and reservation (R), 2022



Source: HSRC SAPRS Survey 2022 (All South Africans n=5 960)

South Africans' knowledge and attitudes towards traditional S&T

At the national level, around two-thirds of South Africans were at least 'somewhat knowledgeable' (62%) and 'interested' (68%) in traditional S&T. When examining attitudes related to the benefits (promise) of traditional S&T, the picture was more nuanced (Figure 1). South Africans reported moderately positive views, particularly in relation to the role of traditional S&T in quality of life and agriculture. However, they were more reserved about the roles of traditional medicine and healers. *Reservation* here should not be conflated with a rejection of traditional scientific knowledge.

Views differed by socio-demographic characteristics

The survey revealed that recognition of the positive value of traditional S&T (promise) varied across socio-demographic groups. More positive views were found among individuals with Tshivenda, isiZulu or Xitsonga as a home language, those aged between 16 and 24 years, those who had lower formal educational attainment, those who came from a

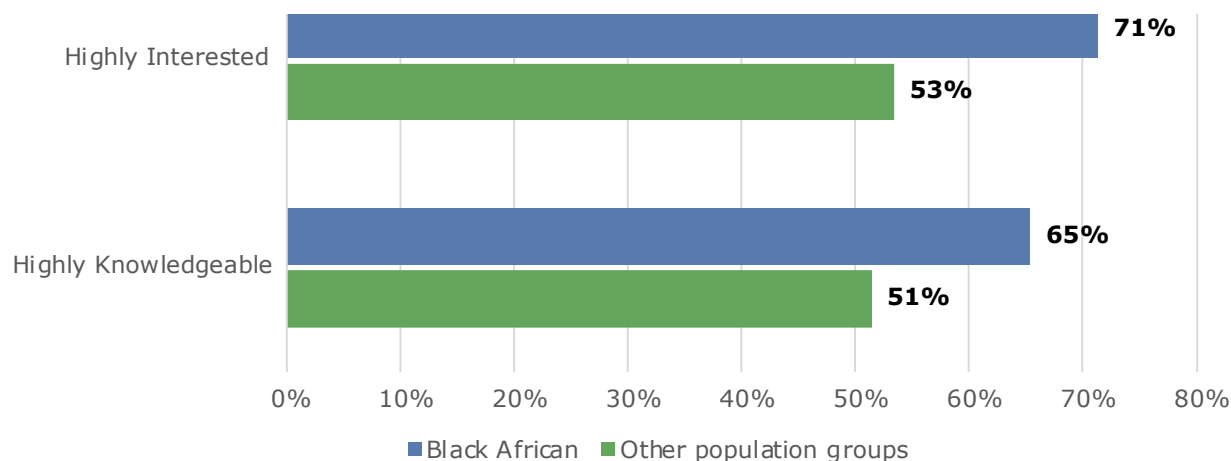
lower socioeconomic status, and those who lived in rural areas. This pattern remained consistent, from 'knowledge' to 'interest', highlighting the influence of formal education on attitudes, while active knowledge-seeking behaviours remained focused among the younger and more educated South Africans.

When looking at the population group data, black South African adults reported 15–20% higher knowledge and interest in traditional S&T than other population groups (Figure 2). Moreover, this group showed notably higher promise attitudes (Figure 3).

As this group comprises approximately 82% of the South African population, we explore their relationship with traditional S&T in more detail. This focus reflects the demographic group's weight in the data, and not an assumption that engagement with traditional S&T is unique to this population group. Intriguingly, the data also indicates a high degree of knowledge and interest among other population groups in areas of traditional S&T.

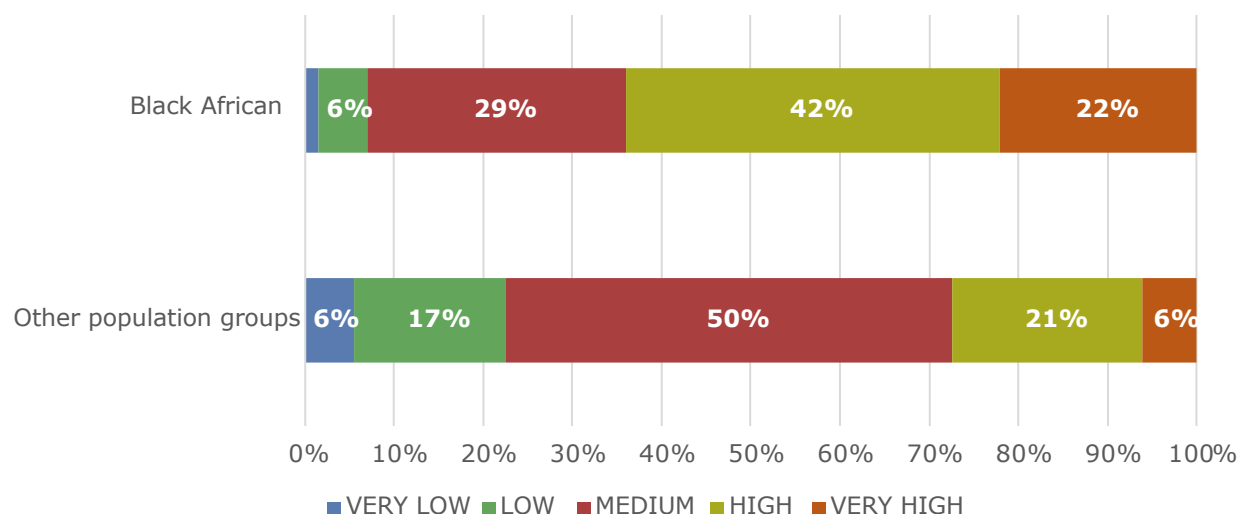
Photo: Kaboompics, Pexels

Figure 2. Knowledge and interest in traditional S&T, 2022



Source: HSRC SAPRS Survey 2022

Figure 3. Index of promise of traditional S&T, 2022



Source: HSRC SAPRS Survey 2022

How do black South Africans relate to traditional S&T?

Younger and more educated black individuals embraced a 'dual framework', viewing traditional and modern science as complementary systems addressing contemporary challenges. This represents an important opportunity to leverage interest and engagement with traditional S&T.

Younger black South Africans demonstrated the highest levels of both knowledge and interest, with interest being consistently higher, highlighting an unmet desire for traditional S&T information and engagement. Younger generations often champion the philosophical, agricultural and intellectual value of indigenous knowledge systems, while utilising modern healthcare systems.

Within this demographic, interest and knowledge increased with formal educational attainment, with

the highest levels amongst university graduates. The data showed that more educated black South Africans are reframing traditional S&T as a valuable knowledge system alongside modern science. Traditional small-scale farming is widely supported across groups, being largely immune to the educational and generational disparities in other findings.

While interest and knowledge were higher among those who self-identified as 'non-poor' (on a subjective poverty scale), reliance on traditional healers and home remedies increased among those identifying as poor. Therefore, although many black South Africans expressed knowledge and interest in traditional S&T, it became a more practically relied-upon resource within poorer households. This is supported by literature showing that many [South Africans](#) rely on traditional medicine, due to factors such as affordability, accessibility and social context.

Geographic location did not reveal significant differences between urban formal and rural residents. However, consistent with the reality of informal settlements, where traditional remedies are often a more immediate and practical alternative to formal medicine, residents were more reliant on traditional healers and medicine.

Modern and traditional S&T as dual knowledge systems

One of the most important findings is that black South Africans, particularly those who are younger and more educated, recognised the benefits of both modern and traditional S&T. The finding suggests that traditional and modern knowledge systems are not always in conflict but often coexist in daily life, establishing a dual framework of complementary rather than incompatible knowledge systems.

Promoting traditional S&T in South Africa

There is an opportunity to frame traditional S&T as an important complementary knowledge system and to integrate it with modern S&T in South Africa. This is particularly important among individuals with existing knowledge, interest and supportive attitudes that can strengthen the recognition and relevance of traditional S&T. We suggest the following to enhance the position of traditional S&T in South Africa:

- **Highlight the complementarity of traditional and modern S&T:** Segments of the public recognise the complementary nature of modern and traditional S&T. Science communication must therefore move away from a binary 'modern vs traditional' framing of S&T to a more integrative approach.
- **Target groups supporting traditional S&T:** Focus on young, educated black South Africans and those in urban areas that recognise the dual S&T systems, as they have the capacity to advocate for the integration of traditional S&T into education, research and policy.
- **Increase knowledge, interest and support:** Targeted strategies are needed to promote traditional S&T among groups with lower knowledge, interest and appreciation, including those who are older, with lower formal education and are living in rural areas, and other population groups.
- **Address the knowledge-interest gap:** As interest was generally higher than knowledge, there is an opportunity to produce credible content that explains and promotes the role of traditional S&T through channels such as digital media, public campaigns and educational curricula.

- **Profile examples of real-world integration:** Initiatives that illustrate the connection between traditional and modern S&T should be showcased, such as the work of [Prof. Motlalepula Matsabisa](#) at the University of the Free State, which bridges indigenous knowledge systems and rigorous clinical science.

This Heritage Month, the SAPRS Survey findings offer something worth celebrating. Traditional knowledge, medicine and practices are not fading away, but are being celebrated, reinforced and adopted, especially by [younger generations](#). More importantly, this body of knowledge is actively being expanded and integrated with modern practices. The benefits are not limited to one group but are accessible to all South Africans. Like modern S&T, traditional knowledge can be subjected to rigorous testing, research and development, and commercialisation to yield valuable context-informed products, services and community benefits. These benefits and opportunities should be better understood to ensure communities are acknowledged in the process of traditional S&T discovery and validation. As young South Africans increasingly show us, heritage and progress are not opposing forces; they are more often held in the same hand, charting the path forward.

Authors and acknowledgements

This article was written by Dr Saahier Parker (senior research specialist), Sylvia Hannan (chief researcher) and Dr Thando Tenza (chief researcher), all from the HSRC's Equitable Education and Economies (EEE) division. It is based on findings from the [2022 SAPRS Survey](#), which was funded by the Department of Science, Technology and Innovation.

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Over the course of four years, the core research team members on the SAPRS Survey project were Dr Vijay Reddy, Dr Benjamin Roberts, Sylvia Hannan and Dr Steven Gordon. Researchers who contributed to aspects of the study were Dr Thando Tenza, Dr Shanaaz Dunn, Dr Ngqapheli Mchunu, Dr Thobeka Zondi, Fabian Arends and Dr Saahier Parker.



AI-generated image, Magnific.

Unlocking the 71%:

How South Africa's multilingual scientists can help bridge the science-society gap

A new HSRC analysis reveals that while nearly three-quarters of South African scientists speak multiple languages, most still communicate science in English. Accessing this hidden national linguistic asset could transform public trust and science accessibility for many South Africans.

Scientific information is naturally more accessible when people can engage with it in a familiar language. South Africa is highly multilingual, with 12 official languages and numerous additional indigenous, heritage and immigrant languages, yet the country's digital news media remain predominantly [English-speaking](#).

So, how can researchers and science communicators make science more accessible in a country shaped by deep social inequalities and uneven access to education?

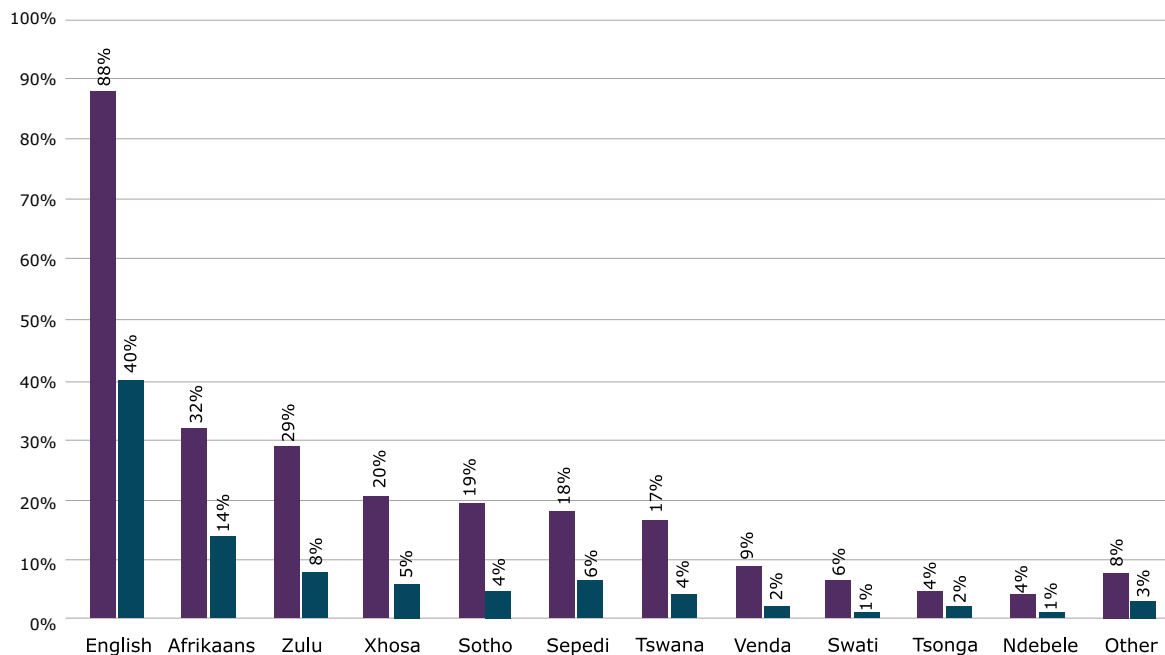
A recent HSRC analysis, published in the journal [article](#) "Language, learning and engagement: Science communication skills among scientists in South Africa", suggests that part of the answer may already exist within the science system itself. The analysis found that many of the country's scientists are bilingual or multilingual, which broadens their potential reach as science communicators.

English dominates science communication

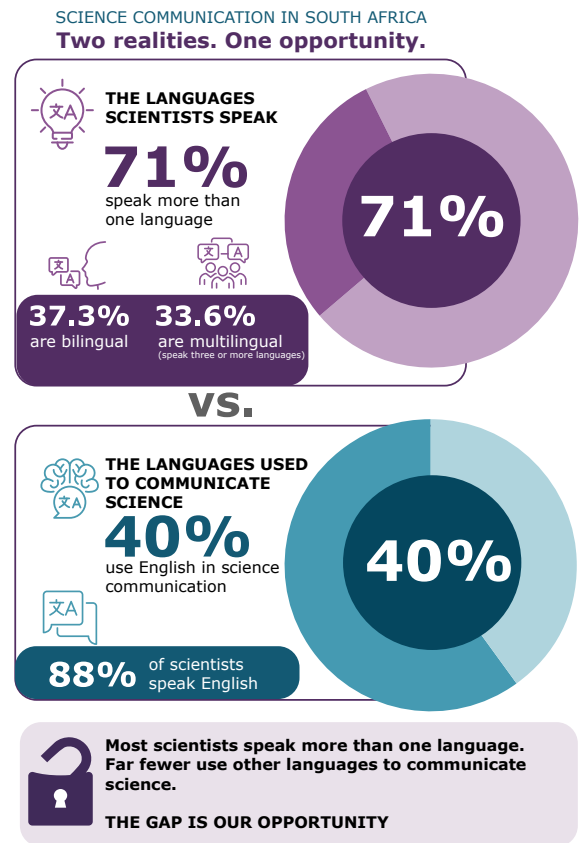
Based on a survey of 300 scientists, 71% spoke more than one language, with 37.3% being bilingual and 33.6% multilingual. However, this linguistic diversity was not being fully harnessed in science communication. English was spoken by 88% of those surveyed and remained the dominant language in science communication, used by 40% of respondents.

Other languages were far less frequently used, as depicted in Figure 1. Although 28.7% of respondents spoke isiZulu, only 8% used it in science communication. Similarly, isiXhosa was spoken by 20.3% but used by 5%, while Sesotho was spoken by 19% but used by just 4%.

Figure 1. Languages spoken by scientists versus languages they used in science communication, 2022



Source: Parker and Gastrow, 2026



There are several possible reasons for this disparity in language use in science communication. [English](#) is the international language of science and is often the language of higher education, publication and technical terminology. At the same time, many indigenous languages lack standardised scientific vocabulary, which makes it harder to explain specialised concepts consistently.

Building bridges between science and the public

In an era of misinformation and online confusion, clear and accessible science communication is increasingly important. Scientists play a vital social role, articulating the value of science, technology and knowledge, and the impact these have on different groups.

The 2022 [South African Public Relationship with Science Survey](#) revealed that South Africans were broadly receptive to science, although this trust was accompanied by reservations. Many respondents said there was so much science information that it was hard to know what to believe, and scientists often kept their work secret.

Who are South Africa's science communicators?

The HSRC analysis showed that scientists involved in public science communication were more likely to be young, black, female, postgraduate-qualified, and based in Gauteng or the Western Cape. Most of the survey participants were researchers, lecturers or professionals involved in medical or engineering research. Many had already taken part in public science engagement activities: more than half had attended a science engagement event, and 40.7% had publicly presented scientific work in the previous 24 months.

There were also encouraging levels of confidence and enjoyment among scientists. About 67% said they enjoyed public communication activities, while many rated themselves highly in public speaking.

Multilingual scientists were more likely than monolingual scientists to engage a wider range of audiences. For example, 44% of multilingual scientists engaged with more than five types of audience, compared with 33% of bilingual scientists and 23% of monolingual scientists. The ability to engage with a larger number of audiences highlights the broader role of language diversity in science communication, as multilingual approaches could help bridge cultures, improve accessibility and support more inclusive participation in science. Nevertheless, factors other than language clearly influence how widely scientists engage.

A national asset waiting to be used

South Africa's multilingual scientists are an underutilised asset. The country already has many scientists with the language skills to communicate beyond English, but to do so they need stronger institutional support. This support could include producing communication materials in different languages, offering training in cultural awareness and digital skills, and aligning these efforts with institutional language policies.

Science communication training should also be included in undergraduate curricula and a science communication competency model implemented for South Africa. The HSRC has recently overseen the development of the Science Communication Skills Development Competency Model (SCSDCM), an evaluative framework that provides clear skills development pathways for impactful, interactive public engagement.

Peer mentorship in skills development would also be useful in resource-challenged settings, which are common throughout South Africa. Rather than treating multilingual science communication as a simple matter of translation, collaboration between scientists and local communities could support the co-development of scientific terminology. This would help ensure that scientific concepts are communicated in ways that are accurate, accessible and rooted in local linguistic contexts. Such work could support science education, improve public understanding of research, and help make science feel more connected to people's lived experiences.

Research contacts and acknowledgements

This *Review* article was written by Dr Saahier Parker, a senior research specialist, and Dr Michael Gastrow, a research director from the HSRC's Equitable Education and Economics Division and HSRC science writer Jessie-Lee Smith. It is based on a journal article titled [Language, learning and engagement: Science communication skills among scientists in South Africa](#) by Parker and Gastrow. For more information, please contact Parker at sparker@hsrc.ac.za.

The research was funded by the South African Department of Science, Technology and Innovation.

South African sign language

Portuguese
Tshivenda San
Afrikaans Nyanja
Shona Sepedi Urdu
isiZulu Hebrew
Greek Siswati
Xitsonga Hindi
Setswana
German Chinyanja
Gujarati English
Tshivenda Sanskrit
Chewa Arabic Tamil



Controlled nursery propagation, or in this case growing seedlings in styrofoam trays, allows water conservation, Muyexe Village, Limpopo, 2024. Photo: HSRC

When the rains fail: Drought exposes the human cost of climate change in rural Limpopo

Drought is recognised as an environmental and agricultural crisis, but an HSRC-led study in Muyexe Village, Limpopo, revealed far broader impacts. It affects health, education, household income and access to food and water, with children, older people and poorer households carrying the greatest burden. The study showed how the Muyexe community has adapted to these challenges, and suggested ways in which it can be supported going forward.

Climate change is reshaping people's lives through rising temperatures, unpredictable rainfall and increasingly severe weather-related hazards. [Drought](#) is particularly difficult to manage because it develops slowly, with effects accumulating as water sources dry up, crops fail, livestock decline and households exhaust their savings and other resources. These pressures are especially severe in communities that already face poverty, unemployment and inadequate public services.

An HSRC-led [study](#) found that beyond the direct environmental and agricultural effects, drought intensifies socio-economic vulnerability and undermines public health. Conducted in collaboration with the University of KwaZulu-Natal, the study aimed to identify the direct and indirect impacts of prolonged and recurring drought on Muyexe Village in Limpopo, South Africa's northernmost province.

The study focused on examining socio-economic and health challenges, and documenting community-based coping and adaptation strategies. Data were collected between February and March 2024, through focus groups with community members in Muyexe Village as well as interviews with individuals representing local government, healthcare, traditional leadership and community structures.

A village shaped by scarcity

[Muyexe](#) is a rural village in the Greater Giyani Municipality, approximately 35 km east of Giyani and close to the Kruger National Park. Its population of about 15 000 residents is exposed to a hot, semi-arid climate, with recurring droughts, high temperatures and unreliable rainfall.

In [2009](#), Muyexe was selected as the first pilot site for the Comprehensive Rural Development Programme, a government initiative to address poverty and food insecurity, improve standards of living, rectify past injustices and create economic opportunities.

Although the programme made progress in delivering houses and sanitation facilities, many households in Muyexe still lack piped water and depend on boreholes, rainwater harvesting, seasonal surface water or distant communal taps. These water sources often became unreliable during droughts. The area also faces high unemployment and infrastructure limitations, leaving households with few resources to absorb climate-related shocks.

When drought becomes part of daily life

The study identified children and elders as the most affected groups in the Muyexe community, because of their specific vulnerabilities. "Children skip school because there is no water for bathing," one interviewee explained, while focus group participants highlighted the difficulties of washing school uniforms. Water shortages may therefore affect long-term educational outcomes, inhibiting economic opportunities.

"The elders are most affected because they are the ones involved in farming; so drought affects their daily lives," expressed another focus group. Apart from needing water for crops and livestock, the elders use it for cooking and washing, yet their limited mobility – combined with the risks imposed by heat exposure, dehydration and existing chronic illnesses – makes it difficult for some to walk long distances to collect water. Women and younger family members must often take on the additional

work of collecting water and caring for children and older relatives.

The study participants recognised that scarce or unsafe water could lead to diarrhoea, cholera and other illnesses. They also described headaches, fainting, skin problems, and complications among people living with hypertension or diabetes during periods of extreme heat and water scarcity. Chronic patients were deemed particularly vulnerable when clinics lacked the resources to respond to heat-related illness, dehydration and disease outbreaks.

Drought also exacts a heavy emotional and psychological burden. Stress resulting from the loss of livestock and crops contributes to mental health challenges such as anxiety and depression, particularly among older people, and may exacerbate other health conditions.

Hunger, job losses and widening inequality

Reduced agricultural production during drought means households have less food to eat or sell. At the same time, food prices rise and families become increasingly dependent on social grants as job losses occur. One farm, for example, reduced its workforce from 36 people to 12 due to drought.

Crucially, drought did not affect everyone equally but intensified existing inequalities. Those with stable salaries, including teachers, nurses and police officers, were better able to cope than people dependent on agriculture, informal work or grants.

Communities adapt, but cannot do it alone

Muyexe residents developed practical ways of coping. Some sold livestock to buy food, preserved maize and seeds for future planting, sought part-time employment, or used weather information from radio, television, mobile phones and community social-media groups to inform farming practices.

Residents also adopted water-efficient cultivation methods, such as bag gardening (growing crops in large sacks or bags filled with soil instead of planting directly in the ground) and controlled nursery propagation (growing out seedlings in a small, managed space before transplanting them into the fields). These methods allowed households to use smaller quantities of water, reduce crop losses and continue producing some food during dry periods.

However, all focus group participants reported that they had received no formal climate-change adaptation training. This is a critical gap, given that general weather information does not provide the local, practical guidance communities need to protect their health, water supplies and livelihoods.



Growing crops in bags means water used is isolated to the bag and not dispersed into the ground, allowing less water to be lost, Muyexe Village, 2024.

Photo: HSRC

Turning evidence into action

The study findings suggest that Muyexe and other drought-prone areas need urgent investment in boreholes, rainwater-harvesting systems, small-scale irrigation and other reliable water infrastructure. Local health systems should be improved to provide interventions during droughts and heatwaves, including mobile clinic services, mental-health support, and better care for chronic patients. Early-warning mechanisms for climate-sensitive diseases, stronger disease surveillance, and better use of climate information when planning staff, medication and other resources are also needed.

Climate education in schools as well as practical community training could help residents prepare before conditions reach crisis levels. These initiatives should ideally integrate local and traditional knowledge about water conservation, drought forecasting, food production and health.

Most importantly, government departments should not treat water, agriculture, health and social protection as separate concerns. Multi-layered, coordinated interventions are essential to effectively mitigate the far-reaching impacts of drought on rural communities like Muyexe.

Research contacts and acknowledgements

This *Review* article was written by HSRC science writer Jessie-Lee Smith with Caiphus Baloyi (PhD research trainee) and Dr Wilfred Lunga (chief research specialist) from the HSRC's Developmental, Capable and Ethical State. It is based on the paper [Surviving the dry spell: socio-economic, health, and adaptive challenges of drought in Muyexe Village, South Africa](#) by Baloyi, Lunga and Dr Moya Bydawell from the University of KwaZulu-Natal's College of Humanities.

For more information, please contact Baloyi at cbaloyi@hsrc.ac.za



Community Hall in Muyexe Village, Limpopo, 2024
Photo: HSRC

Nature and humanity competing for survival:

More than a conservation issue



A seal lying on a concrete dock at a harbour in Cape Town, South Africa, in 2021, where fishers gather to sell fish. Photo: Taryn Elliott, Pexels

In early 2026, the human population surpassed 8.3 billion. Staggering population growth over the 20th and 21st centuries prompted conservationists and environmentalists to urgently call for sustainable sharing of land and resources between humans and wildlife. Across southern Africa, that coexistence remains fragile as human-wildlife conflict is a growing concern.

For example, a recent article in the [Daily Maverick](#) by Vuyisile Hlatshwayo reported that wildlife moving through a private reserve fence across the South Africa–Eswatini border has led to persistent crop raids and livestock losses, deepening food insecurity, poverty and the risk of disease in neighbouring Eswatini communities.

[Interactions between humans and wildlife](#) negatively impact wildlife, as retaliatory killings and habitat encroachment can destabilise ecosystems, reduce biodiversity, and contribute to the decline of vulnerable species. Yet this news article vividly illustrates how human-wildlife conflict can negatively impact humans too, by affecting crops, livestock, safety, and rural livelihoods.

Human activity has long threatened wildlife survival. As the global population grows beyond eight billion, conservationists are calling for more sustainable growth, movement and development. In a recent book chapter, researchers argue that protecting ecosystems, biodiversity and species will require greater attention to the people most affected by human-wildlife conflict, many of whom are already struggling to sustain their livelihoods and food security.

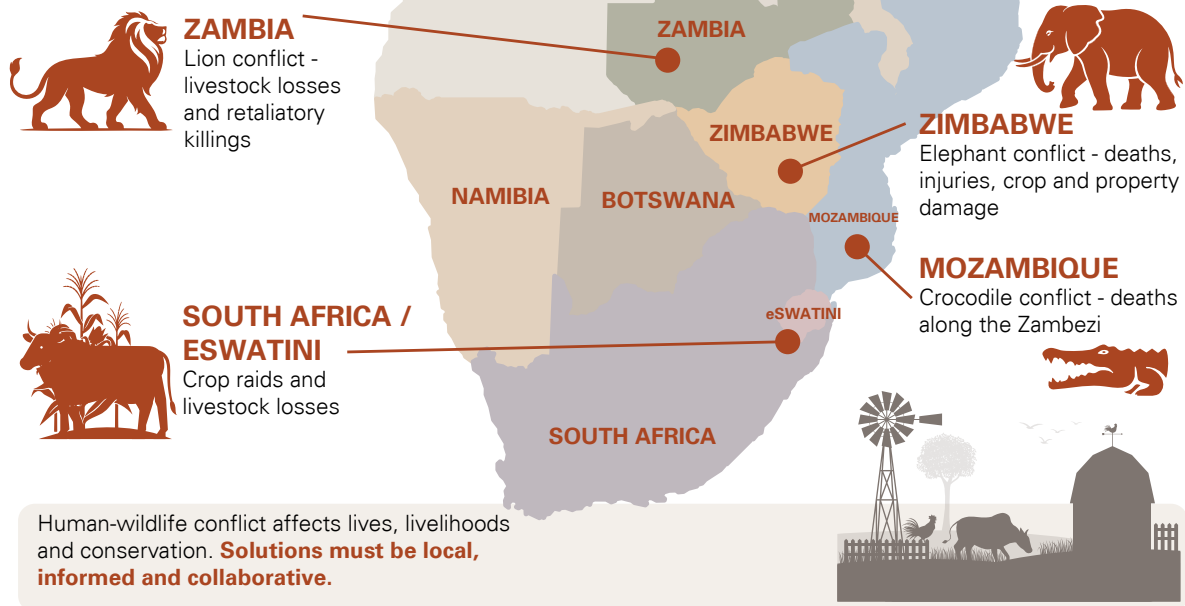
This is especially significant in the Southern African Development Community (SADC), a region already facing entrenched poverty and food insecurity. According to the [World Bank](#), extreme poverty in sub-Saharan Africa reached 46% in 2024 and remains particularly acute in eastern and southern Africa.

The study

“Human-wildlife conflict is not only a conservation concern but also a significant development and humanitarian issue, particularly affecting vulnerable communities living below the poverty line,” HSRC researchers and a partner recently argued in [Chapter 3: Human-Wildlife Conflict in Mozambique, South Africa, and Zimbabwe: More Than Just a Conservation Concern of *The Palgrave Handbook of Human-Animal Interactions in the Global Context of Climate Change, Disasters, and Other Crises*.](#)

HSRC researchers Wilfred Lunga, Caiphus Baloyi, Tshegofatso Ramaphakela and Dimpho Makitla, together with co-author Dr Charles Musarurwa from Midlands State University, Zimbabwe, examined human-wildlife conflict in the southern Africa region to identify practical, context-sensitive solutions for reducing conflict and supporting coexistence between people and wildlife.

HUMAN-WILDLIFE CONFLICT ACROSS SOUTHERN AFRICA



Examples of human-wildlife conflict

A [news article](#) reported that in Hwange National Park in Zimbabwe, human-elephant conflict led to 71 deaths and 50 injuries in 2021 and 60 deaths and 40 injuries in 2020. Alongside threats to human life, elephants frequently raid crops and damage property, creating economic losses.

In the Luangwa Valley of Zambia, human-lion conflict poses serious challenges to local communities. There, attacks on livestock and occasional threats to human life have contributed to [retaliatory killings](#) of lions.

In Mozambique, crocodile attacks on humans are a major problem along the Zambezi River, especially during the rainy season when water levels rise. According to [Mozambique's Ministry of Land and Environment](#), at least 200 people have died because of human-wildlife conflict since 2019.

Conflict drivers

The chapter shows that human-wildlife conflict in the southern Africa region was shaped by a combination of social, environmental and governance pressures rather than by wildlife behaviour alone.

Population growth and settlement expansion into wildlife areas have brought people, farms and infrastructure into spaces once used more exclusively by wild animals, increasing the chances

of dangerous encounters and damage to property and crops.

Agricultural expansion and habitat loss are shrinking and fragmenting ecosystems, making it harder for wildlife to move and feed without crossing into cultivated or settled areas.

Competition over land and natural resources further intensifies this pressure, especially where communities depend directly on farming, grazing, water and other ecosystem resources for survival.

Climate change is worsening the situation by increasing droughts, floods and other environmental shocks that can alter wildlife movement, reduce available habitat and push animals into closer contact with human settlements.

Limited or fragmented policy responses ensure that weak coordination, poor integration across sectors and gaps between conservation and disaster risk strategies can leave communities more exposed and conflict harder to manage.

Communities need to benefit from wildlife instead of bearing only the cost

"To mitigate human-wildlife conflict and improve tolerance for wildlife among local communities, it is essential to establish a common understanding between the local population and authorities

regarding the risks versus benefits involved,” researchers wrote.

The chapter argues that coexistence is difficult because the costs of living with wildlife are often endured most heavily by rural communities. Yet the communities that live closest to wildlife often see few, if any, of the benefits associated with its conservation. Crop destruction, livestock losses, property damage and threats to human safety can make wildlife feel less like a shared natural asset and more like a daily risk.

Researchers in this study argued that coexistence is therefore not only about keeping wildlife alive, but about creating conditions in which people can live with wildlife at acceptable levels of risk in comparison to the benefits they may gain. This requires strong institutions, local trust, practical support and benefits that communities can genuinely feel.

Zimbabwe’s CAMPFIRE programme

A good example of an attempt to make coexistence work in practice is Zimbabwe’s [CAMPFIRE programme](#), a major community-based natural resource management initiative designed to give rural communities a direct stake in wildlife

conservation. CAMPFIRE has helped create incentives for communities to see wildlife as an asset rather than only a threat, by linking wildlife to benefits such as tourism income, safari-hunting revenue and other locally generated funds.

The programme has simultaneously contributed to conservation while creating opportunities for local benefit-sharing, showing the potential of community-centred approaches to reduce conflict and support coexistence.

Despite its successes, the programme has had problems with unequal revenue distribution, wavering donor support and increasing pressure from elephants, all of which limited its ability to deliver fair and lasting benefits to communities living closest to wildlife.

What should be done?

The researchers argue that reducing human-wildlife conflict requires inclusive wildlife policies that take the livelihoods, safety and everyday realities of communities living closest to wildlife seriously. Conservation responses need to address not only biodiversity protection, but also how the costs and benefits of living with wildlife are shared.



An elephant on a road in Kruger National Park, a dedicated wildlife reserve, South Africa, 2024.
Photo: Dietmar Rabich, Wikimedia Commons

As climate change shrinks wildlife habitats and the need arises to recover predator populations, pressure on shared spaces intensifies. This presents an opportunity to rethink land-use systems that bring people and wildlife into closer contact. Without changes to how these spaces are managed, retaliatory killings could further diminish important wildlife species.

There is also a need to strengthen community institutions and local decision-making. When communities are meaningfully involved in managing wildlife and responding to conflict, trust can grow and local responses can become more effective. Additionally, coexistence is more likely to succeed when people experience wildlife not only as a risk, but also as a source of opportunity. Distrust in institutions and weak coordination are serious problems, but they could also push the development of shared management systems, where different groups work together to respond to conflict and build resilience.

Improving compensation for losses and damages is another important step. When crops are destroyed, livestock are killed or people are harmed, timely and fair support can reduce hardship and improve tolerance for wildlife. Current compensation schemes typically fail because of bureaucratic lag or underfunding. These failures could be reframed as an opportunity to deploy insurance models that pay out automatically upon verified loss events (such as when rainfall drops below a certain level) and mobile payment platforms, cutting response time from months to days.

Conservationists and decision makers need to protect ecological corridors and limit settlement in high-conflict areas. Better land-use planning could help reduce direct contact between people and wildlife. The ongoing expansion of agriculture into

migration corridors is not merely a land-use problem; it is an ecological debt trap. Strategic corridor restoration and buffer zone incentives may offer a triple win, reducing mortality on both sides, enhancing genetic flow for endangered species, and accessing funding through nature-based projects, such as forests or wetlands, to capture and store carbon.

Researchers also recommend combining local knowledge with technologies such as monitoring and early-warning systems. Together, these can help communities anticipate risks and respond before conflict escalates. For example, combining real-time sound and movement sensors with indigenous tracking knowledge can help communities predict wildlife movement, instead of reacting only after conflict happens. [Evidence](#) suggests such early-warning approaches can substantially reduce conflict. For example, an Indian programme reported an overall 60–70% decline after introducing a technology-supported warning system alongside other conservation measures.

Impact

By showing how conflict disrupts food security, livelihoods and community wellbeing, and highlighting the importance of community-centred institutions and policy reform, this research could help shift the conversation from protecting wildlife alone to building conditions for coexistence that work for both people and biodiversity.

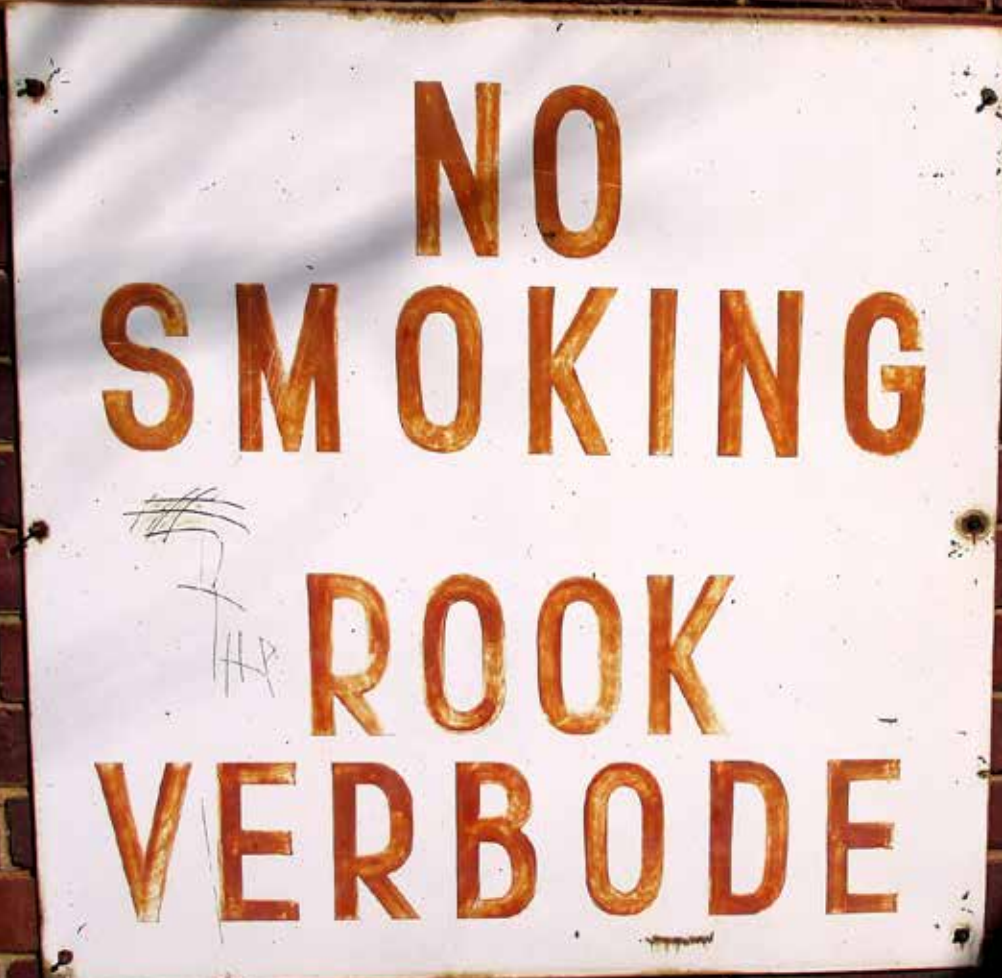
“Our analysis highlights the importance of community involvement, alternative livelihoods and sustainable resource management in reducing human-wildlife conflict and fostering co-existence,” researchers wrote.

Research contacts and acknowledgements

This *Review* article was written by Jessie-Lee Smith with inputs from Dr Wilfred Lunga. It was based on the chapter [Human-Wildlife Conflict in Mozambique, South Africa, and Zimbabwe: More Than Just a Conservation Concern](#) in the book [The Palgrave Handbook of Human-Animal Interactions in the Global Context of Climate Change, Disasters, and Other Crises](#).

For more information about this work, please contact Lunga at WLunga@hsrc.ac.za.

The research team included Dr Wilfred Lunga, Caiphus Baloyi, Tshegofatso Ramaphakela and Dimpho Makitla from the HSRC’s Research, Development, Science and Innovation Division and Dr Charles Musarurwa from Midlands State University, Zimbabwe.



NO
SMOKING
ROOK
VERBODE

Photo: [Katangais](#), [Wikimedia Commons](#)

Do tobacco laws lead to decreased tobacco use?

Evidence from the 2020 pandemic's tobacco ban

Tobacco use contributes to public health concerns in South Africa. This is especially true given the country's high HIV and tuberculosis burden, as tobacco can worsen health outcomes for those living with HIV. The country's temporary tobacco sales ban during the pandemic created a rare opportunity to examine whether restricting access to tobacco could change tobacco-use behaviour.

On 27 March 2020, the South African Government implemented a [temporary COVID-19 tobacco sales ban](#) prohibiting the sale of tobacco products, e-cigarettes and related products. The government justified the ban on [public-health grounds](#), citing concern that smoking could increase vulnerability to severe COVID-19 and place additional pressure on the health system. The restriction was lifted and sales resumed from 18 August 2020.

Although the sale of tobacco products was prohibited, illicit cigarettes remained widely available, with survey [evidence](#) showing that most smokers who continued smoking were still able to buy cigarettes despite the ban.

Tobacco use remains a major [public health concern](#) in South Africa. The latest available data for the country report that 29.4% of adults aged 15 years and older in South Africa used tobacco in 2021, corresponding to approximately 12.7 million people. Of these, 41.7% of men and 17.9% of women used tobacco.

Smoking and other forms of tobacco use are linked to cancers, heart and lung disease, and other serious illnesses. For people living with HIV, [tobacco may be associated with poorer health outcomes](#) and a greater risk of complications, including tuberculosis and other conditions that can worsen already fragile health.

What can the ban teach us?

South Africa's temporary ban on the sale of tobacco and vaping products during the 2020 COVID-19 pandemic created an unusual moment to examine whether policies that try to change behaviour by controlling the availability or sale of a product (supply-side policies) could interrupt tobacco use, particularly in vulnerable populations.

A [study](#) co-authored by HSRC researcher Dr Ronel Sewpaul explored how tobacco use changed before, during and after the 2020 tobacco sales ban among people living in rural KwaZulu-Natal, in an area with high HIV prevalence. The study was conducted by researchers from several research organisations and set out to understand whether the sales ban reduced tobacco use, whether people switched to other tobacco products, and which factors were linked to quitting or relapsing once the ban ended.

The sample population

The study drew on participants from the [Vukuzazi programme](#) in rural KwaZulu-Natal. Vukuzazi is a large population-based health study established to improve understanding of infectious and non-communicable diseases in the region. Between 2018 and 2020, residents in the region aged 15

years and older were invited for health screening for HIV, tuberculosis, hypertension and diabetes. As part of that baseline screening, information was also collected on current and lifetime tobacco use.

Between May 2021 and November 2022, researchers conducted telephonic interviews with a subset of the original Vukuzazi sample, comprising all individuals who were smokers or former smokers at the time of the 2018–2020 baseline study, and a random sample of those aged 15–29 years who had never smoked, with an even division by HIV status.

How many people quit smoking during and after the ban?

Of 1,448 eligible participants, 752 completed the telephonic survey. This analysis focused on 449 people who reported using tobacco just before the ban. Among them, 26.3% said they stopped using tobacco during the ban. However, this reduction was mostly temporary: 87.3% of those who stopped during the ban reported using tobacco again after the ban. Overall, tobacco use after the ban was 8.7% lower than before the ban. Notably, only 3.3% stopped during the ban and remained tobacco-free afterwards, while a slightly larger share, 5.3%, quit only after the ban had ended.

These findings suggest that the ban did interrupt tobacco use for some people, but that most of this effect was not sustained over time. The researchers argued that a temporary supply restriction on its own was not enough to support long-term cessation, especially in a context where illicit tobacco remained accessible and formal quitting support was limited.

Predictors of tobacco use before and after the ban

The study also investigated which factors predicted the use of tobacco during and after the ban. Factors studied included age, sex, intensity of combustible tobacco use, HIV status, any history of trying to quit before the ban, alcohol use, non-communicable diseases such as hypertension or diabetes, socioeconomic status and employment status.

HIV status

The study found that, after adjustment for other factors, people living with HIV were more likely than those not living with HIV to stop using tobacco during the ban. The authors suggest that this may reflect heightened health concerns during the pandemic, especially given the perceived risks of COVID-19 for people with existing health vulnerabilities (comorbidities).

Intensity of tobacco use

Heavier tobacco use before the ban made quitting less likely. For each increase in daily combustible tobacco use, the odds of stopping during the ban

fell. Researchers argued that this pointed to the role of nicotine dependence, as people who smoked more heavily may have found it much harder to quit, even when legal access to products was restricted. The discussion notes that this strengthens the case for accessible cessation support, including pharmacological treatment, especially for heavier users.

Previous attempts to quit

A history of trying to quit before the ban also mattered. Among those who had stopped during the ban, people who had previously attempted to quit were less likely to relapse afterwards. Prior attempts to quit were also linked to lower tobacco use after the ban more generally. This suggests that the ban may have had a greater effect on people who were already somewhat motivated to stop, with less impact on those with no prior intention to quit.

Other factors

Other factors, such as age, sex, socioeconomic status, alcohol use, employment status and non-communicable diseases, were examined, but most were not statistically significant predictors in the final adjusted models for quitting during the ban. Still, the paper notes that people with non-communicable diseases appeared somewhat more likely to stop during the ban, even if this did not reach statistical significance. In addition, older people were more likely to continue to use tobacco after the ban ended.

Changes in use of specific tobacco products

The study also looked at whether people switched between products during the ban. Among those who used combustible tobacco (tobacco that is burned and smoked, such as cigarettes) before the ban, 73.2% continued using it during the ban, and only 0.5% switched to smokeless tobacco. Among those who used smokeless tobacco (tobacco that is not burned and often placed in the nose or mouth, such as chewing tobacco) before the ban, 71.8% continued using it during the ban and 28.2% stopped all tobacco use. None switched to other product types during that period.

After the ban, most users stayed with the same kind of product they had been using during the ban. Among those using combustible tobacco during the ban, 91.2% were still using combustible products afterwards.

Among those using smokeless tobacco during the ban, 93.8% continued using smokeless tobacco afterwards. Of those who had stopped using tobacco during the ban, 78.0% used combustible tobacco after the ban, 8.5% used smokeless tobacco, and only 12.7% remained tobacco-free.

This pattern is important, because it shows that the overall drop in tobacco use was not mainly driven by people replacing cigarettes with other products. Instead, switching between product types was minimal. The researchers suggest this may reflect strong product preferences, limited access to alternatives, or affordability constraints.

What does this mean for policy?

The study provides rare evidence from a rural, predominantly black South African population with high HIV prevalence, a group often underrepresented in earlier research on the tobacco sales ban. It shows that the 2020 ban was associated with a temporary reduction in tobacco use, but that most people who quit during the ban relapsed afterwards.

"High relapse rates and continued use particularly among people with higher nicotine dependence or no prior quit intentions reveal the limitations of South Africa's supply-only tobacco sales ban policy," researchers wrote. "These findings support the need for demand-focused policies that expand access to behavioural and pharmacological tobacco treatments, to achieve more sustained reductions in tobacco use."

Research contacts and acknowledgements

This *Review* article was written by HSRC science writer Jessie-Lee Smith with inputs from Dr Ronel Sewpaul. It was based on the paper [Changes in tobacco use in rural South Africa during the 2020 tobacco sales ban: an analysis of current and previous behaviours using cross-sectional data](#)

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Photo: [Sarah Johnson, Wikimedia Commons](#)

Self-diagnosis and technology: Do people trust apps and self-testing over clinics and hospitals?

Self-testing and rapid diagnosis could bring healthcare closer to people who face barriers to clinic-based services. But do people trust these tools to deliver accurate and safe results? A multi-country study involving the HSRC shows that many people believe self-testing with rapid diagnostic tests, especially when supported by a mobile app, could improve privacy, convenience and timely diagnosis in low-resource settings.

Rapid diagnostic tests are simple medical tests, such as pregnancy tests, that people can take at home. They can be self-administered independently or with guidance from healthcare providers to detect certain conditions quickly. [Research](#) has shown that self-testing can reduce barriers to care seeking; lessen stigma and costs; support earlier diagnosis and treatment; and strengthen home-based self-care.

The potential of self-testing is relevant in South Africa and other African countries. Alongside high burdens of communicable diseases, such as HIV and tuberculosis, many communities are also facing [rising rates of non-communicable diseases](#), including diabetes and hypertension.

In South Africa, self-testing for HIV with rapid diagnostic tests has become an important part of service delivery. [Data](#) suggest that self-testing for HIV has helped reach groups often missed by conventional health services.



A home pregnancy test

Photo: [RDNE Stock project](#), [Pexels](#)

Between 2017 and 2020, more than one million self-test kits were distributed through the STAR programme, with most going to men and a sizeable share to young people, including many who had never tested before or had not tested in over a year.

A recent multi-country study involving HSRC researchers examined the acceptability of self-testing using rapid diagnostic tests for a range of conditions. The study explored unassisted self-testing and testing supported by a mobile phone app. Participants in the study included community members, healthcare providers, and community and public health leaders in Kenya, South Africa and Zambia.

The researchers assessed how acceptable these approaches were across different user groups in a [paper](#) published in the *Journal of Medical Internet Research* in November 2025.

The app

The mobile phone app, [HealthPulse TestNow](#), was designed to support self-testing by guiding users step by step, assisting with result interpretation, storing and sharing data, and linking users to follow-up care and health information. In the study, the app was shown to participants as a demonstration tool to assess its potential acceptability. Before questions about the app, participants were taken through step-by-step instructions for self-testing and shown examples of data storage and dashboards.

Data collection

From 15 May to 24 August 2023, data were collected in rural and urban sites in Migori County (Kenya), Umsunduzi Sub-District in KwaZulu-Natal (South Africa) and Luanshya District (Zambia). Participants totalled 178, including 24 community and public health leaders, 41 healthcare providers and 113 community members. Researchers used key informant interviews, in-depth interviews and focus group discussions.

Data collection was carried out by country teams, including qualitative research assistants from the HSRC in South Africa, and the results were analysed based on the Theoretical Framework of Acceptability (TFA).

What is acceptability according to the TFA?

The TFA defines acceptability as how people perceive an intervention and whether they consider it appropriate, manageable and worthwhile. The framework includes several dimensions:

- **Affective attitude:** how people feel about the intervention
- **Burden:** how much effort is needed to take part
- **Ethicality:** whether it fits with people's values
- **Intervention coherence:** whether people understand how it works
- **Opportunity cost:** what people may have to give up to use it
- **Perceived effectiveness:** whether people think it will work
- **Self-efficacy:** whether people feel confident they can do it
- **Perceived benefits:** the advantages people believe they gain from it (Although the study identified perceived benefits as an additional acceptability construct, these benefits were woven through the findings.)

Key findings

Affective attitude

Overall, across the three countries, participants expressed positive feelings about self-testing. Some described self-testing as a "very good thing in the community" that "would be wow" for improving health. They also admired the "beauty" of self-testing and said the app could bring healthcare "closer". In Kenya and Zambia, app-assisted self-testing was associated with "a modern world" and "digital life". However, some participants anticipated resistance to new technologies. Racial sensitivities were cited in South Africa, with one participant worried that some might dismiss self-testing as "white people business".

Burden

Participants generally saw self-testing as "simpler, shorter and easier" and felt that, with the right

support, using the app could be "a walk in the park". They said written and visual guidance could help people through the process, especially "if guided by the guidelines" or "properly educated". However, they also recognised practical challenges, including the cost and availability of tests, access to data and electricity, connectivity issues, and the need for training and infrastructure for wider rollout.

Ethicality

Many participants felt that self-testing supports privacy, autonomy and confidentiality, allowing people to feel "free", "safe", and "not scared" that their "secret" would be exposed. Some described it as a "game changer" because it shifted testing from "clinician-driven" to "individual-driven". At the same time, they also raised ethical concerns, including misuse of tests, poor disposal, data breaches, unequal access, and the emotional impact of receiving an upsetting result while alone.

Intervention coherence

Participants generally understood the value of self-testing and were already familiar with some forms of rapid testing, particularly for HIV and malaria. They understood that testing could help people decide when and where to seek care, but were less familiar with how the app itself would function. The study suggests that successful uptake would require shared community understanding, leading to greater "openness" and "cooperation".

Opportunity cost

Participants believed self-testing could save time and improve convenience, potentially reducing the need for clinic visits. Community members especially liked the idea of getting medicine locally or receiving home visits, which they believed would free up time for other activities. However, they also noted trade-offs, including the cost of rapid diagnostic tests and apps, disruption to established practices, and concerns among providers about possible job security.

Perceived effectiveness

Participants saw self-testing as an effective way to improve access to healthcare, enable earlier diagnosis and treatment and ease pressure on overburdened facilities. They believed the app could make self-testing even more useful by improving guidance, follow-up and data sharing, with one participant saying it could place health services "from the palm of my hands". Others said linking the app to hospitals could help people get "services faster". Although they worried about false readings and human error, most still felt that the benefits outweighed the risks.

Self-efficacy

Participants were generally confident that people

could self-test, especially if “everything will be guided through the app”. They felt that training, practice and support from healthcare workers or the app itself could build confidence and reduce mistakes. However, they also acknowledged that people with limited education, digital literacy or difficult test results might still need reassurance and support from family members or providers.

What do the findings mean?

This research adds to a growing body of knowledge on the acceptability of self-testing integrated with mobile phone-based apps. The study showed that self-testing, both independently and with app support, is widely seen as acceptable in low-resource settings where health systems are under pressure and many people still face barriers to care. Across Kenya, South Africa and Zambia, participants believed self-testing could improve

privacy, convenience, autonomy and timely access to diagnosis and treatment, while also reducing strain on clinics.

The study also highlighted the challenges that must be addressed for self-testing to work equitably, including digital exclusion, infrastructure gaps, data privacy, emotional support and integration into existing health systems. The researchers recommended that self-testing be implemented through context-specific, equity-focused approaches. This includes user-friendly design, local language support, offline functionality and accessibility for people with low literacy or limited digital access.

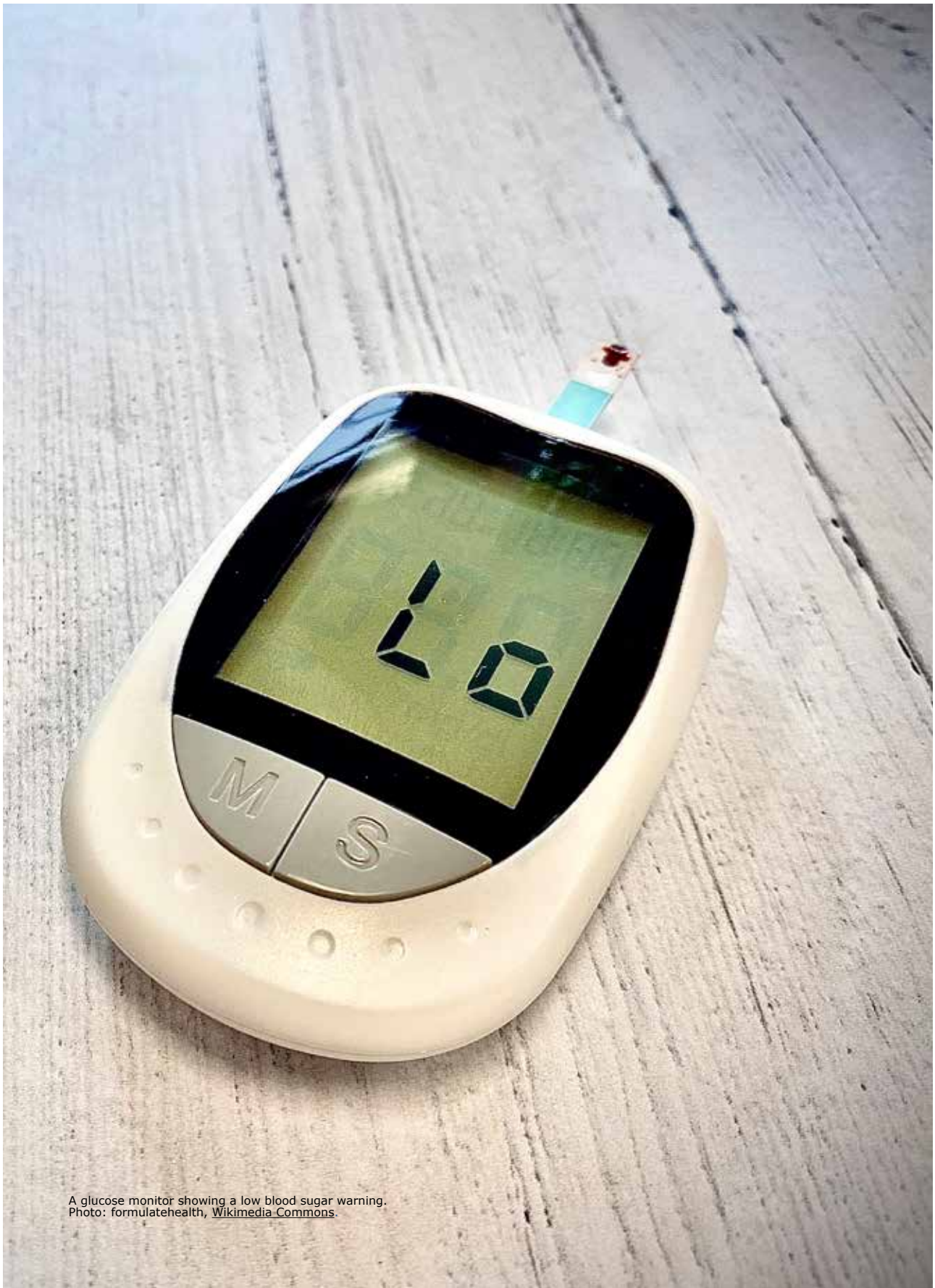
The authors also recommended education, training, low-cost access, secure data systems and clear linkage to care, so that self-testing can be scaled up in a way that is ethical, effective and accessible to underserved communities.

Research contacts and acknowledgements

This *Review* article was written by HSRC science writer Jessie-Lee Smith with inputs from Dr Hilton Humphries (senior research specialist) in the HSRC’s Public Health, Societies and Belonging Division. It was based on the paper [Perspectives on App-Assisted Self-Testing Using Rapid Diagnostic Tests Among Community Members, Health Care Providers, and Public Health Leaders in Kenya, South Africa, and Zambia](#).

For more information about this work, contact Dr Hilton Humphries at hhumphries@hsrc.ac.za.

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A glucose monitor showing a low blood sugar warning.
Photo: [formulatehealth](#), [Wikimedia Commons](#).

What do parents and healthcare workers want from a child health bot?

Photo: [Magnific](#)

With the help of HSRC-run workshops, researchers in South Africa and Portugal asked parents and healthcare professionals what a child health chatbot should and should not do. Their findings suggest that such tools could give caregivers timely, practical guidance and help them recognise when professional care is needed, but only if they are trustworthy, inclusive and carefully adapted to local realities.

Findings from [Stats SA](#) showed that influenza and pneumonia remained the leading underlying natural cause of death among children aged 1–14 in South Africa. Additionally, many child deaths in South Africa between 2017 and 2020 were caused by ‘modifiable factors’ such as delays in seeking healthcare.

To support parents and mitigate preventable deaths, the [Parent-Coach project](#) aimed to leverage technological advancements in message-based systems (chatbots) to help first-time parents care for their children’s health and well-being.

The HSRC, working with the University of Cape Town (UCT) and Fraunhofer Research Center for Assistive Information and Communication Solutions (AICOS), ran workshops to inform the chatbot’s design. An earlier set of workshops in South Africa and Portugal looked at how parents assessed the child health advice they received. Those results were published as a journal [article](#) in the March edition of the [HSRC Review](#).

In this latest [article](#), researchers outlined the results of a further round of workshops exploring what healthcare professionals and recent parents thought about using chatbots to support child health. The workshops also asked how both groups wanted a chatbot to look and behave – its concept, interaction style, content design, personality and tone of voice. Participants of these workshops included 17 healthcare professionals, including paediatricians and therapists, and 36 first-time or recent parents from South Africa and Portugal.

What healthcare professionals wanted from chatbots

‘We found that healthcare professionals viewed chatbots as valuable tools to support parental decision-making, helping determine when medical attention is necessary, enhance health literacy, and complement – rather than replace – healthcare professionals,’ the researchers wrote.

Healthcare professionals welcomed the idea, believing chatbots could improve parents’ decision-making skills and health literacy. “In the emergency room, if there was health literacy, [most cases] would probably not even need medical assessment,”

one paediatrician from Portugal said.

A South African nurse agreed: “[The chatbot] will give them information while they are just sitting at home – there won’t be a reason to come here. I am not saying they must not come, but only when there is a necessity. But people must get to be independent and be parents who are informed, fully informed.”

However, healthcare professionals did not want chatbots to provide medical diagnoses, prescribe medication, manage emergencies, or replace clinical judgement. “I don’t think it should do anything where a child needs to be seen by a doctor, or anything that needs a subjective opinion. If you’re unable to give an answer that is ... yes or no, then you probably need a human eye to see it and to make that decision,” a paediatrician from South Africa said.

Finally, healthcare professionals wanted chatbots to offer evidence-based content that parents would find credible. That meant citing sources and having reputable institutions behind the tool. “Parents will trust it if we clinicians endorse it because people trust something that is sold to them by a well-known health department,” said a nurse from South Africa.

What parents wanted from chatbots

Parents agreed with healthcare professionals that chatbots should not replace professionals. ‘Parents imagined the chatbot as a first line of support, which could offer practical advice and help them assess the urgency of a situation they dealt with,’ the researchers wrote. ‘They saw the chatbot as a tool that could facilitate communication and provide clear, practical guidance whenever needed.’

Parents wanted clear steps and several options they could act on immediately, rather than long, theoretical explanations. A father in Portugal gave an example of how a chatbot might offer advice: ‘Hello! If you have already consulted your doctor and everything is fine with your child, try giving him [X]. If it doesn’t work, go back to your doctor.’ Parents wanted the chatbot to offer alternative approaches and explain what to do if the first suggestions did not work.

They preferred simple, everyday language that anyone could understand, whatever their education or health literacy. “It shouldn’t be complicated because everyone needs to understand it,” a South African father said.

At the same time, parents did not want information oversimplified. Some wanted useful medical terms included and clearly explained, to help them understand their child’s condition and communicate with healthcare professionals. Parents also wanted flexibility in how they found information, with most preferring the option to type their own questions alongside menus they could browse. “Some people can’t write, so it would be best if they just scroll down and select what they want to select,” a mother from South Africa said.

They also wanted the chatbot to communicate in an empathetic and inclusive way. Many supported a gender-neutral voice so that fathers and other caregivers would not feel excluded. “People think that it’s only women who take care of children, but there are fathers who can take care of the newborn,” a mother from Cape Town said. Others preferred a female voice, which they associated with greater warmth and reassurance.

Portugal versus South Africa

Participants in both countries agreed on most core principles, but the South African context raised additional design needs. These included difficulty in accessing healthcare professionals because of transport costs and long distances; fewer healthcare professionals and medical resources; mobile-data and connectivity limits; the need to communicate across several languages; and larger, more varied households.

For the South African setting, participants suggested that medical terms, images and videos could help overcome language and education barriers. Larger households mean the chatbot might also need to support grandparents and other caregivers. It could be built to work with low-data usage or offline, with

careful local adaptation.

Three difficult design choices

From these findings, the authors identified three main design tensions that would need careful thought.

First, designers must decide whom the chatbot speaks to, honour preferences such as a woman’s voice, and not reinforce the idea that child health is mainly a mother’s responsibility but make sure fathers and other caregivers feel included.

Second, they must balance freedom with guidance. Parents want quick access to information they ask for, but menus and follow-up questions might steer them towards safer, more relevant advice.

Finally, the chatbot must balance plain and medical language, using everyday wording for accessibility while clearly explaining useful medical terms that can strengthen health literacy and help parents communicate with healthcare professionals.

What this means for South Africa

The work could improve child health in South Africa by guiding the design and development of digital tools that give parents and caregivers timely, trustworthy and locally relevant information. In communities with limited resources, where families may face transport costs, long travel distances, long clinic queues and few available clinicians, a well-designed child health chatbot could provide timely help with common childhood health concerns and guide parents on when to seek professional care if needed.

Any such tool should not replace or duplicate what healthcare professionals do, such as making diagnoses. Instead, it should act as a bridge between the home and the health system, supporting early care-seeking for serious symptoms while reducing unnecessary clinic visits for concerns that can be managed safely at home.

Research contacts and acknowledgements

This Review article was based on the article [‘Perspectives of parents and healthcare professionals on using chatbots to support parents in child health: A qualitative study’](#). It was written by Xolani Ntinga (senior research manager) in the HSRC’s Public Health, Societies and Belonging Division and HSRC science writer Jessie-Lee Smith.

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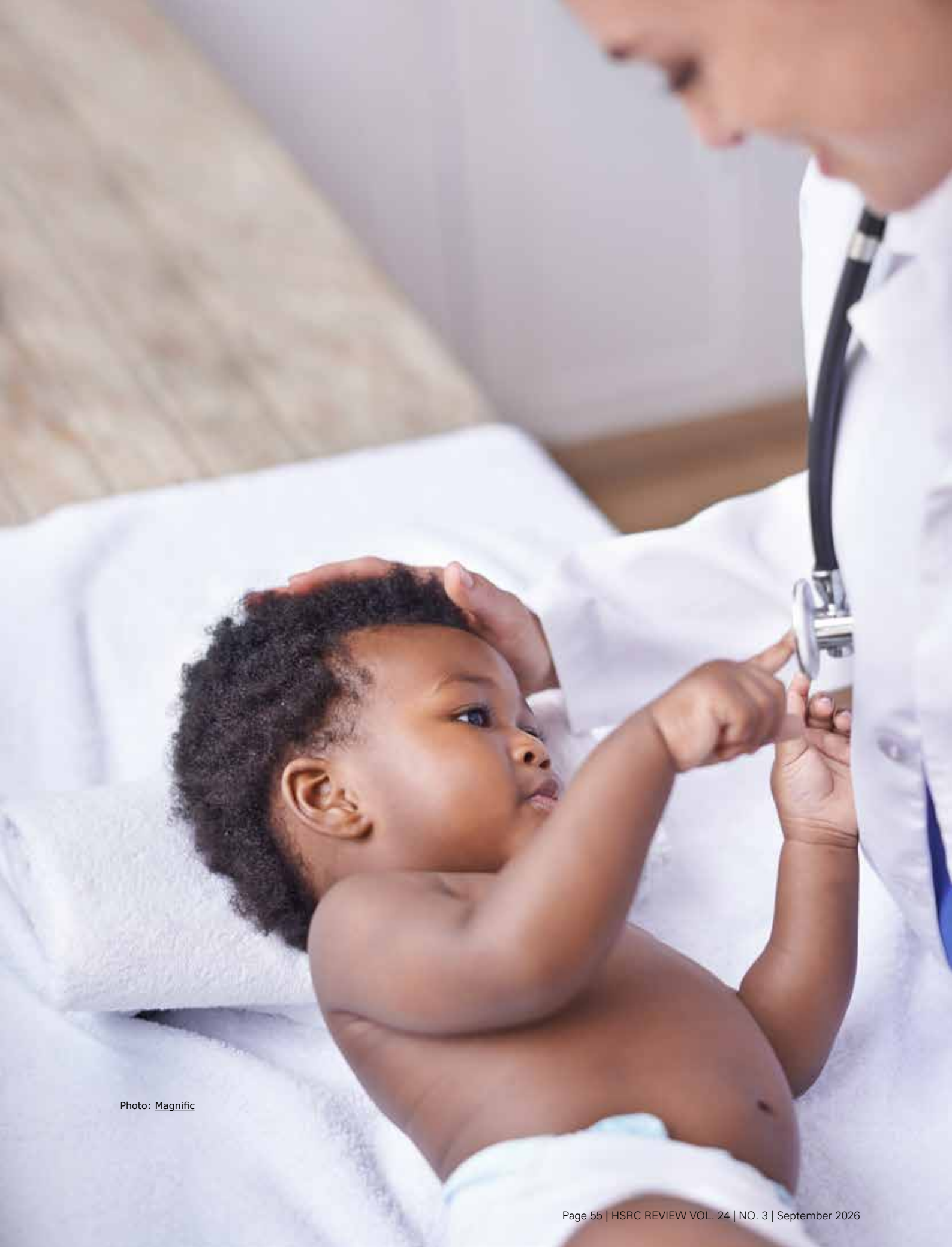


Photo: [Magnific](#)

Centring Bakopa women's voices on Koma ya Basadi:

Understanding the psychological significance of female initiation rites

Initiation rites have long been practised across many African societies, where they constitute an important cultural institution and a significant rite of passage into adulthood. A new HSRC study foregrounds the lived experiences of women who have undergone initiation and the meanings they attach to the practice, contributing to a more nuanced understanding of a cultural institution that has remained largely underrepresented in academic scholarship.

Initiation rites are a deeply rooted cultural institution that shapes identity, social belonging and the transition to adulthood among men and women across generations. However, when female initiation is discussed, it is often framed through [biomedical, human-rights, and gender-based](#) perspectives that foreground female genital mutilation and other bodily harm, as well as the perpetuation of patriarchal gender norms. While these perspectives are important for identifying practices that violate and threaten the health, dignity and rights of women and girls, they risk homogenising culturally diverse forms of female initiation.

A recent [article](#) by HSRC researchers in collaboration with the University of Limpopo, the University of Mpumalanga, the University of South Africa and Botswana's Human Resource Development Council intended to address these gaps in research by examining the psychological and social significance of *koma ya basadi* among Bakopa of Ga-Sekhukhune in Limpopo Province. As a non-surgical rite of passage, *koma ya basadi* centres on intergenerational knowledge transmission and culturally embedded understandings of becoming a woman.

The study was conducted through key informant interviews with 16 women from the Bakopa community. These interviews were complemented by one focus group with six participants and a one-on-one discussion with two participants, for a total of 24 women. All participants had lived experience of the practice.

Koma ya basadi

Koma ya basadi (female initiation process or rites) is conducted in three stages. Girls generally go for initiation from the age of 12 years. In *Go rupa*, the first phase of the initiation process, girls enter seclusion and receive cultural instruction while taking part in activities intended to build discipline, obedience and resilience. This is followed by *Botsho*, a liminal or 'mourning' phase symbolising the end

of childhood, during which initiates follow strict moral codes and are taught about gender roles, community responsibilities and adulthood. The final stage, *Boramaswaile*, marks their reintegration into the community through ceremonial dress, public celebration and recognition of their new status as women.

Psychological and social significance

Understanding *koma ya basadi* requires attention not only to broader debates about gender and tradition but also to the meaning women ascribe to their experiences of initiation. Four themes emerged from the study: transition to womanhood, cultural identity and belonging, intergenerational knowledge transmission and connectedness, and character development.

Transition from girlhood to womanhood and preparedness to adulthood

The findings indicated that female initiation rites were understood by participants as a significant social status transition from girlhood to womanhood. Rather than being viewed solely as a ceremonial event, *koma ya basadi* was described as a transformative process through which initiates acquired recognition as adult women and became eligible to assume the responsibilities associated with womanhood.

Additionally, participants understood the teachings and experiences acquired during *koma ya basadi* as preparing young women for the social, relational, moral and practical responsibilities expected of adult women. The initiation process represented more than a symbolic transition – it provided a framework through which girls were socialised into culturally recognised expectations of womanhood. The findings suggest that initiation functions as an important mechanism through which individual maturity is socially acknowledged as adult status bestowed.

Cultural identity and belonging

A second finding was the strengthening of cultural

Koma ya basadi

A culturally rooted pathway to womanhood, identity and belonging

Cultural identity and belonging

Strengthens a sense of identity, belonging and connection to community.



Psychological and social significance

Insights from Bakopa women on *koma ya basadi*



Transition to womanhood

A transformative journey from girlhood to adulthood, with new responsibilities and recognition.



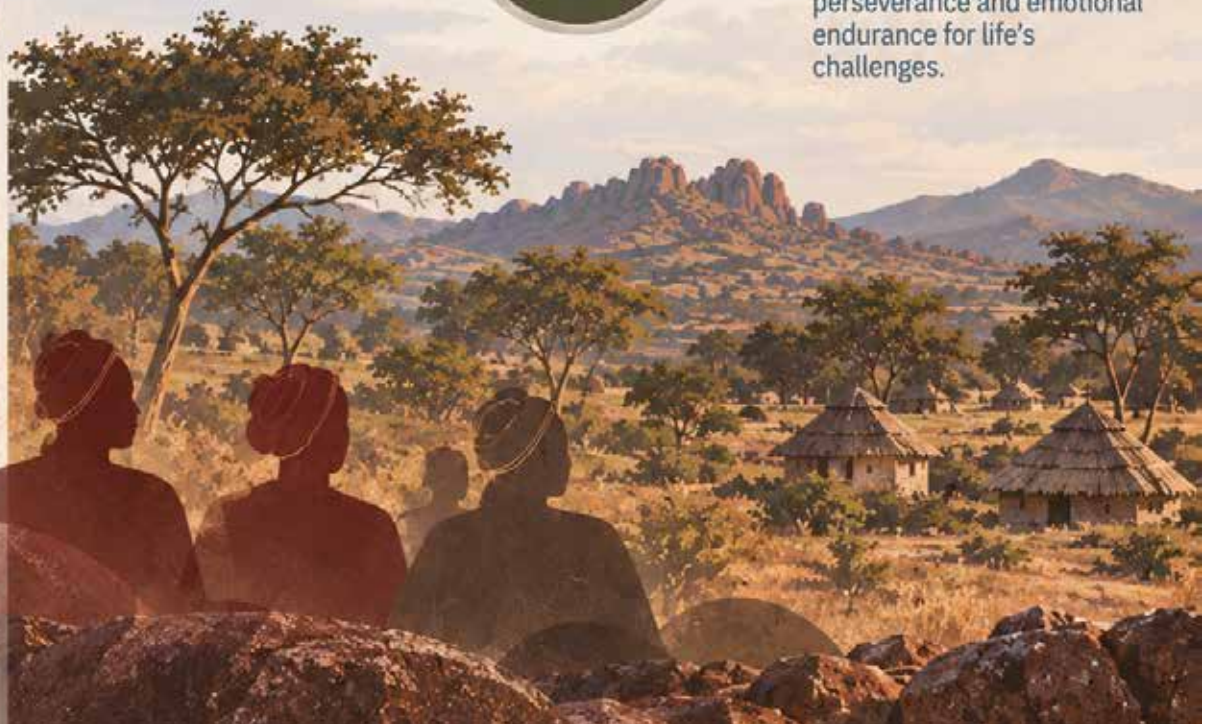
Intergenerational knowledge transmission and connectedness

Older women pass on cultural knowledge, values and life skills, strengthening relationships across generations.



Character development

Builds resilience, discipline, perseverance and emotional endurance for life's challenges.



identity and belonging. Participants associated initiation with learning and embodying the values, traditions, expectations and practices of their community. The process provided initiates with a clearer understanding of who they were and where they belonged within the Bakopa social and cultural environment. One participant said: 'It must always be there; it would not be possible that others go through it and others do not ... so that they belong.'

Belonging was particularly evident in participants' accounts of peer and community relationships, with some indicating that undergoing initiation enabled them to identify with other initiated women and participate more fully in community life. Conversely, those who had not undergone initiation could experience exclusion or a perceived loss of social belonging. For example, one participant noted: 'I used to be envious of seeing people who went through the initiation process, especially my age group, coming back with their initiation names. I still used my childhood name and could not even play with them.'

Intergenerational knowledge transmission and connectedness

The findings demonstrated that initiation also served as a mechanism for intergenerational knowledge transmission and social connectedness. Older women played an important role in transmitting cultural knowledge, moral teachings, behavioural expectations, and an understanding of adult responsibilities to younger women.

In this sense, the initiation setting created structured relationships between generations, allowing cultural knowledge to be preserved and reproduced while at the same time strengthening relationships among women. The findings positioned initiation as both educational and a culturally embedded form of psychosocial support that connected individuals to their families, peers, elders and wider community.

Character development

Another theme concerned resilience and character development. Participants described the initiation experience as contributing to perseverance, tolerance, discipline and emotional endurance. One participant said: 'Koma imparts the right maturity ... and gives a person a new perspective. When initiated, you become considerate.'

The challenges and teachings associated with the initiation process were understood as opportunities

to develop qualities necessary for coping with difficulties and fulfilling adult responsibilities. Another participant said, 'It inculcates perseverance in a person', and another noted, 'In marriage, you will find the in-laws making your life difficult, but because you have learnt to handle difficulties during koma, the treatment does not matter much as you console yourself that this too will pass the same way koma did.'

Therefore, resilience was presented as a culturally cultivated quality developed through participating in a collective rite of passage. The study specifically identifies perseverance and tolerance as qualities that initiation seeks to instil in participants.

Impact

These findings provide an important perspective on how culture can influence psychological and social development. By examining *koma ya basadi* through the lived experiences of initiated Bakopa women, the study offered a contextually grounded account of the psychological significance attributed to female initiation. Participants' accounts positioned initiation as more than a social-status transition; they associated it with cultural identity, belonging, resilience, intergenerational knowledge, social connectedness and preparedness for adulthood.

These findings complicate generalised understandings of female initiation and demonstrate the value of attending to culturally specific meanings and experiences. Importantly, they identify culturally grounded dimensions of identity, belonging and social support that may be relevant to broader understandings of psychological well-being.

Overall, the study's findings support a culturally responsive and rights-based approach to understanding initiation rites in contemporary South Africa. Such an approach recognises cultural knowledge and community relationships as potentially meaningful dimensions of well-being while maintaining attention to safety, voluntary participation, dignity and agency. More research is needed to investigate how female initiation practices negotiate gender variance, including the inclusion and experiences of intersex, transgender, and gender-diverse people, and what these negotiations reveal about participation, belonging, identity and the cultural boundaries of womanhood.



Dr Mmakotsedi Magampa, an HSRC research specialist, wears attire representing a married, divorced or widowed woman who went through the initiation rites. Photo: HSRC

Research contacts and acknowledgements

This Review article is based on a journal article titled 'The psychological significance of female traditional initiation rites among the Bakopa community of South Africa: a qualitative approach to the understanding of koma ya basadi'.

The Review article was written by Dr Mmakotsedi Magampa (research specialist) in the HSRC's Research Impact Division and Dr Lehlogonolo Makola (senior research specialist) in the HSRC's Public Health, Societies and Belonging Division, with inputs from HSRC science writer Jessie-Lee Smith. For more information about this work, please contact Magampa at mmagampa@hsrc.ac.za.

The study team consisted of the HSRC's Dr Mmakotsedi Magampa, Dr Lehlogonolo Makola and Dr Abongile Pindo; Prof. Thelmah Maluleke and Prof. Tholene Sodi (University of Limpopo); Dr Rudzani Marry Mhlari (University of Mpumalanga); Dr Anastasia Julia Ngobe (Unisa); and Prof. Alinah K Segobye (Botswana's Human Resource Development Council).

Social integration and neighbourhood relations between South Africans and African immigrants

While social integration enables immigrants to participate in community life, it does not necessarily guarantee their acceptance within host communities. Neighbourhood acceptance or rejection emerges when locals don't feel comfortable with their immigrant neighbours. A recent study by the HSRC highlights suspicion of African immigrants by South Africans and vice versa because of the prejudices they hold about one another in the neighbourhoods in which they live and work.

The social integration of immigrants is a major priority for African governments and globally. Promoting the social integration of immigrants aligns with [Sustainable Development Goal 16](#), which seeks to foster peaceful, just and inclusive societies. It speaks to target 16.10, which focuses on 'ensuring public access to information and protecting fundamental freedoms in accordance with national legislation and international agreements'. However, despite the stipulations of Sustainable Development Goals 16 and 16.10, relations between locals and immigrants are at times not always cordial, leading to suspicion and tension.

An HSRC [study](#) found that mutual suspicion and prejudice continue to undermine neighbourhood relations between South Africans and African immigrants despite their living and working together. The study aimed to assess residents' baseline levels of satisfaction with their neighbours and neighbourhoods by focusing on safety, trust, social problems and access to local government basic services, as well as to pilot a civic innovation based on the Know Your Neighbour strategy for improving social cohesion among South Africans and immigrants.

Researchers collected data through dialogues conducted in three areas with a high concentration of South Africans and immigrants living and working together as neighbours. Two of the areas were urban

Data collection dialogue at Plastic City, Pretoria East, Gauteng
Photo: Dr Mathias Alubafu Fubah, HSRC, July 2022



(Arcadia, Pretoria, and Yeoville, Johannesburg) and one informal (Plastic City, Pretoria East). Each dialogue consisted of 30 participants, including community leaders, local South Africans, immigrants and representatives of community organisations.

Social integration in the study is presented as an important enabler of social cohesion, especially in host communities and countries in sub-Saharan Africa that receive large numbers of immigrants. This is because social integration of immigrants and migrants allowed them to have and enjoy benefits that unintegrated individuals or persons do not have. [Research](#) suggests that, when insufficient or ineffective efforts are made to ensure social integration, newcomers can become marginalised and thus are more vulnerable to risk of all kinds, including lack of educational opportunities, language barriers and inability to secure decent work.

South Africans and African immigrants as neighbours in the neighbourhoods

Most participants noted that, regardless of the nature of relationships between South Africans and their immigrant neighbours, and vice versa, the two groups live in suspicion of each other because of the prejudices that they hold about one another. According to one of the participants:

'Not all immigrants are bad. Immigrants from certain African countries are good because they don't commit the type of crimes that immigrants from neighbouring countries commit in South Africa. But it becomes difficult to determine if an immigrant is good or bad when he or she is undocumented. Such immigrants are automatically considered as criminals no matter what effort they put to prove their innocence. This is a challenge to living and working as neighbours in neighbourhoods.'

Most immigrant participants felt that local South Africans targeted them because they saw them as criminals, and that is why there was no trust between the two groups. As one of the participants noted:

'I don't trust my South African neighbours because of the impression most of them have about us. My two neighbours are South Africans, but we don't know each other as Africans would normally do towards a fellow African. They speak their local language to me whenever we meet, even though they know that I am a foreigner and don't understand. This is one way of exposing me because when I don't understand, their fellow brothers or friends will start asking: 'Is he a kwere kwere?' Once they realise that you are a foreigner, you become an easy target. They will demand things from you and when you fail to give, they will torment and can even rob you.'

The study found that African immigrants were a 'soft target' for gangs because of the suspicion about them, and that immigrants were vulnerable because they lacked connections to others in the community,

and so there would not be as many repercussions for the perpetrators of the violence against them. Other [works](#) similarly found that in the Delft South area in Cape Town, only those immigrant shopkeepers with strong linkages and/or community support had avoided crime.

Additionally, some of the participants noted that local South Africans had many ways of victimising them the moment they discovered that they were foreigners. Some would simply 'set you up', according to some participants, and if you didn't end up in the hands of the police, you would be robbed.

Most of the immigrant participants living in the informal settlement did not speak English (some spoke Portuguese and others Lingala) and, as a result, were isolated and treated differently by local South Africans and neighbours. For example, one of the participants narrated how she could not receive assistance from a neighbouring clinic because she could not speak English at the time and was easily identified as a foreigner, and nurses did not see any reason to assist her.



Participants during a data collection dialogue at the African American Cultural and Career Training Centre (AACCT), Arcadia, Pretoria, Gauteng
Photo: Dr Mathias Alubafi Fubah, HSRC

According to one of the respondents:

'Speaking the same or a similar language with your South African neighbour in the neighbourhood does not mean that you are safe. Some of us Zimbabweans speak Ndebele just like some local South Africans, but the accent is different. So, when you speak for the first time, South Africans may think that you are one of them and will be friendly but as time goes on, they will discover that you are a foreigner and their attitude towards you will start changing.'

The study further found that some local South Africans made impromptu visits to neighbourhoods hosting immigrants to ascertain if the immigrants owned the houses they were living in or renting. In the dialogue in Yeoville, for example, one of the participants noted that he was unexpectedly visited by a group of three South African men who wanted to know if he had documents and if he owned the property he was living in. When he presented his documents, they left, promising to return to check that everyone living in the house was documented. This suggests that some South Africans feel comfortable living with immigrant neighbours who are documented or legally in the country and neighbourhoods.

Towards ensuring effective social integration of immigrants

The study highlighted the need to ensure effective social integration that allows South Africans and African immigrants to live comfortably as neighbours, without being suspicious of one another. Discussions were enriching and, in some

areas, such as Yeoville and Plastic City, the ward councillors and some participants requested that such dialogues be organised frequently because they contributed towards social integration through the recommendations that they generated from both local South Africans and immigrants. Major recommendations included the following:

- Legal documentation of immigrants to ensure they can be traced and accounted for when the need arises
- Awareness creation to address the issue of prejudices and suspicion held by local South Africans and immigrants about each other
- Establishment of a 'know your neighbour' campaign to promote living together by locals and immigrants as neighbours in neighbourhoods
- Promotion of social security and justice for local South Africans and immigrants
- Prioritisation of South African citizens in terms of service delivery, among others

While acting on these recommendations could contribute greatly to enhancing a sense of living and working together among South Africans and immigrants, we recognise that maintaining an appropriate balance depends on many factors that vary across time and place. Dealing with this requires regularising the legal status of African immigrants to ensure that their South African neighbours see them as people who are legally in the country and neighbourhoods rather than illegal or undocumented immigrants.

Research contact and acknowledgement

This *Review* article was written by Dr Mathias Alubafi Fubah (senior research specialist at the HSRC's Developmental, Capable and Ethical State division) and Ms Kegomoditswe Mamabolo (Department of Science, Technology and Innovation-HSRC intern), with inputs from HSRC science writer Jessie-Lee Smith.

It was based on the book chapter 'Local South Africans and immigrants as neighbours in the neighbourhoods', published in the book *Social Integration of Immigrants in Sub-Saharan African Communities: Challenges and Prospects* (African Sun Media, 2026). For more information, contact Dr Mathias Alubafi Fubah at MAlubafi@hsrc.ac.za.

Collaborating researchers included Dr Isaac Kabelenga (University of Zambia) and Ms Dimpho Makitla (University of South Africa).

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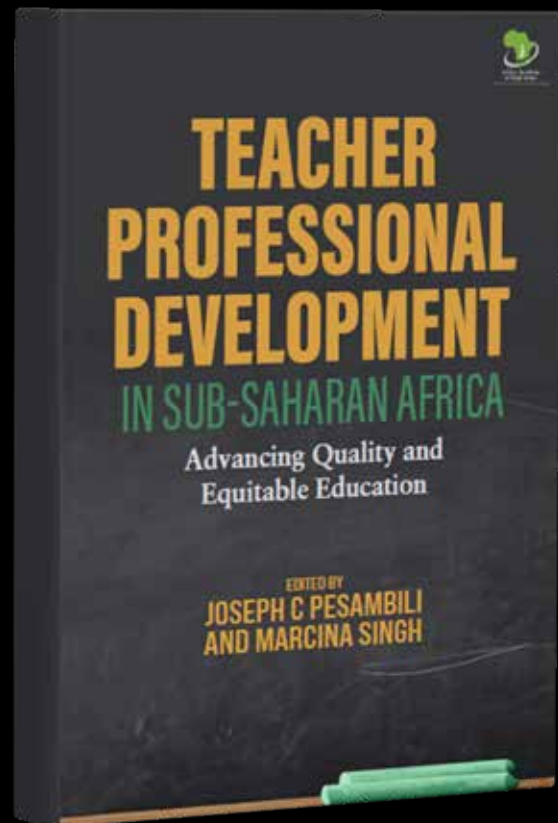
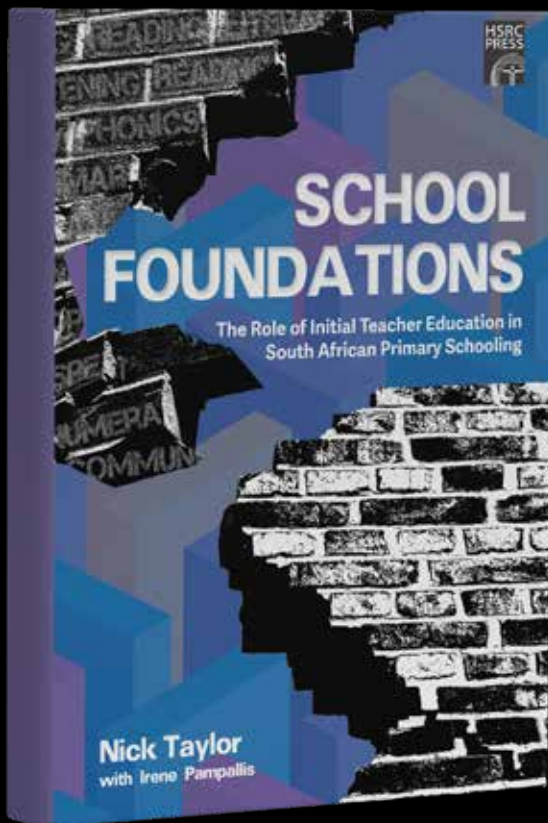


Group picture at data collection dialogue, Plastic City, Pretoria East, Gauteng
Photo: Dr Mathias Alubafi Fubah, HSRC, July 2022.

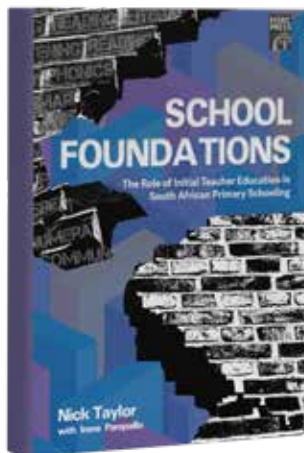
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School Foundations

The Role of Initial Teacher Education in South African Primary Schooling

Author:	Nick Taylor with Irene Pampallis
Publication:	HSRC Press
ISBN (soft cover):	978-0-7969-2730-9
Format:	229 mm x 152 mm
Extent:	200 pp

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R320

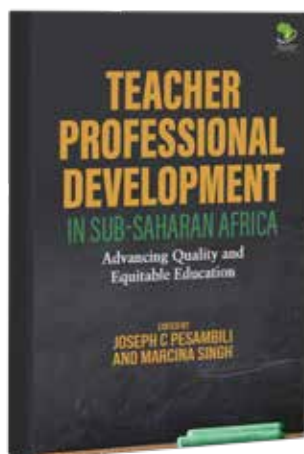
About the book

Why are so many South African children leaving the early grades unable to read for meaning or do basic arithmetic? This is one of the country's most urgent and uncomfortable questions. *School Foundations: The Role of Initial Teacher Education in South African Primary Schooling* turns the lens away from the classroom and onto the institutions that prepare teachers, offering a thorough investigation of how South Africa selects, trains and equips those who specialise in the foundation and intermediate phases – the years in which literacy and numeracy are meant to take root. It follows the education-to-employment pipeline from the moment a student chooses teaching as a career, through the design of university curricula, to the point at which a newly qualified teacher walks into the classroom.

Weaknesses in initial teacher education do not fall evenly. They compound existing inequality, sending teachers with the thinnest grounding in how to teach reading and number sense into schools that can least afford under-preparedness. This shifts the debate from “are our teachers good enough?” to “good enough for whom and prepared how?” – a distinction that goes to the very core of South Africa’s constitutional promise of equal access to quality education.

“*School Foundations* presents important research on the persistent challenges of teaching and learning literacy and mathematics in South African schools. Written with elegance and clarity, it demonstrates how initial teacher education can – and must – play a more effective role in addressing these urgent concerns. Essential reading for teacher educators, policymakers, researchers and teachers alike, the book offers a compelling analysis of the links between teaching practice, educational outcomes and teacher preparation, while also illuminating practical pathways for disrupting the cycle of underperformance.” – Linda Chisholm, Centre for Education Rights and Transformation, University of Johannesburg

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Teacher Professional Development in Sub-Saharan Africa

Advancing Quality and Equitable Education Project

Editors:	Joseph Pesambili and Marcina Singh
Publication:	AISA
ISBN (soft cover):	978-0-7983-0554-9
Format:	234 mm x 156 mm
Extent:	360 pp

Price

R420

About the book

Teacher professional development in Africa is too often reduced to a technical fix, a training programme, a donor project or a box ticked. This book reframes that perspective.

Teacher Professional Development in Sub-Saharan Africa: Advancing Quality and Equitable Education offers a critical, evidence-based examination of continuing professional development (CPD) across Africa. The volume's contributed case studies and theoretical chapters reveal how CPD is shaped by structural constraint, fragmented authority and chronic donor dependence, and explore how it is implemented and experienced by professionals and practitioners.

Drawing on diverse African contexts, including conflict-affected and refugee settings, the volume confronts a stubborn reality: the gap between ambitious reform expectations and the institutional conditions in which teachers work. In under-resourced systems, what looks like resistance or failure to adopt global teaching trends is often professional judgment, adaptation and ingenuity.

This book takes teachers seriously. It emphasises their agency, local knowledge and context, and challenges the persistent tendency to frame African teachers as problems to be fixed rather than professionals to be supported.

The argument is clear: CPD is not a stand-alone intervention. It is a political, institutional and ethical project. Getting it right is not a question of technical solutions but of power, equity and what quality teaching and learning actually require.

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