

# BOPHELO

*Advancing Life*



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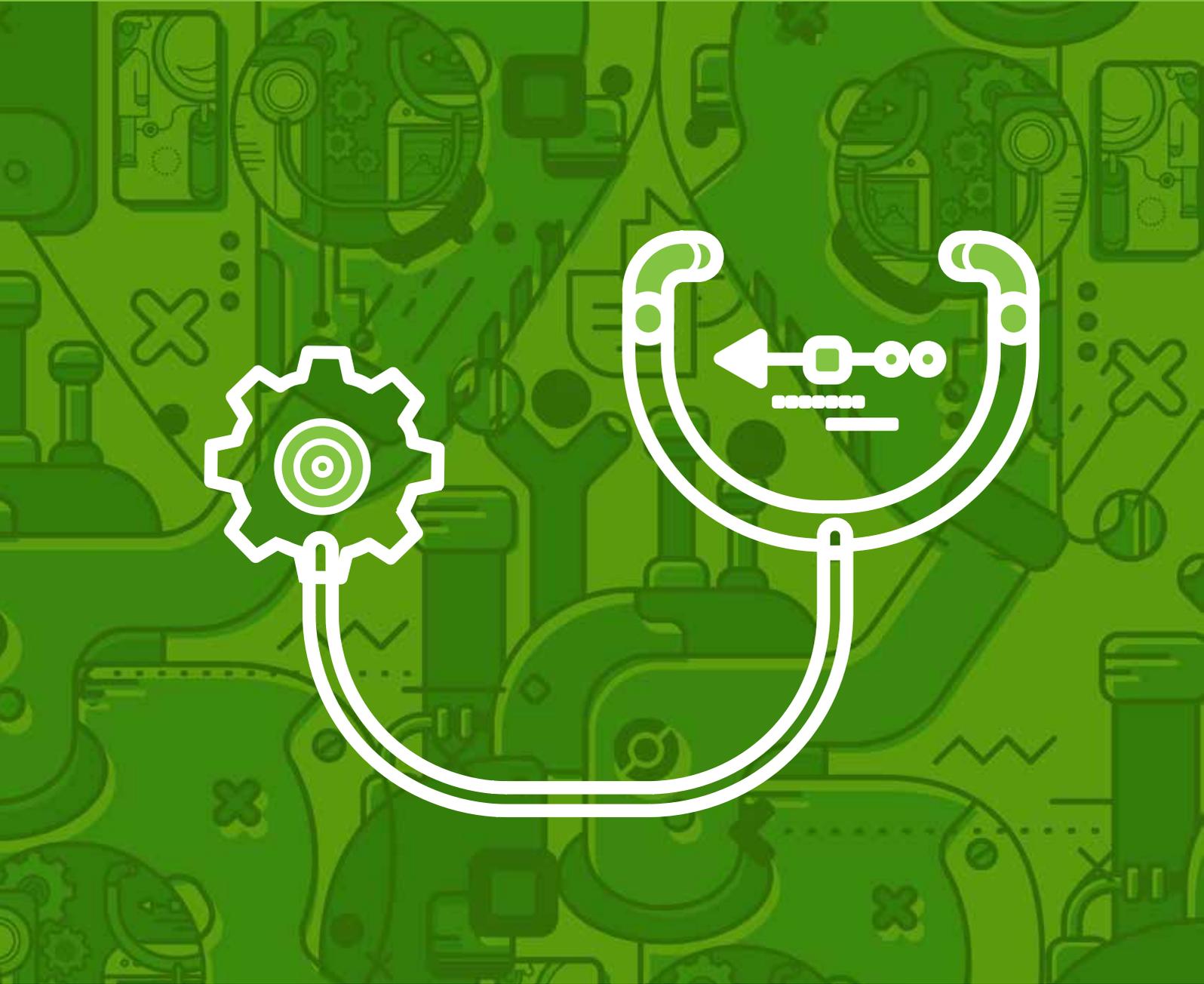
“

*What is going to take us forward as South Africa is identifying brilliant young scientists because science is about individuals with talent, aptitude, commitment and a passion to build this country*

– Professor Bongani Mayosi, South African Cardiology Professor.

”





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## Letter from our PRESIDENT & CEO

*"To support the National Department of Health in fulfilling its promise of a healthy life for all, the SAMRC funds research into South Africa's burden of disease. The Council offers at least 20 different funding opportunities per annum, resulting in close to 400 ongoing and funded projects over a one to five year period."*

As the South African Medical Research Council (SAMRC) heads towards its 50th year, we will demonstrate the impact we are having in South Africa. Despite the tight fiscal environment, the SAMRC has shown impact in strategic healthcare innovation, conducting responsive medical research and research translation to improve the quality of life of South Africans. In addition, we are committed to developing the next generation of health researchers.

During the 2017/18 financial year the SAMRC's impact can be characterised by our scientific output, local and global collaborations, capacity development and knowledge translation strategies which include engagement with both policy makers and the communities we serve.

These pillars of impact were achieved through our focus on strategically funding and conducting responsive health research. Science cannot exist in a vacuum, as a developing country investing in both health research and addressing transformation of science is vital.

Transformation remains an integral part of developing towards a more inclusive and economically vibrant society. We see transformation as the blue print towards growing a responsive scientific edifice of South Africa. Transformation in science, by supporting diversity in our new generation of scientists, is one of the SAMRC's strategic tools towards fulfilling the promise of a long and healthy life for all South Africans.

As part of our transformation agenda and research capacity development, we have increased the number of masters and doctoral students supported through our programmes, as well as developing a cohort of interns and clinicians of which includes the national health scholars programme, an ambitious public-private partnership.

To support the National Department of Health in fulfilling its promise of a healthy life for all, the SAMRC funds research into South Africa's burden of disease. The Council offers at least 20 different funding opportunities per annum, resulting in close to 400 ongoing and funded projects over a one to five year period.

The Council has demonstrated excellence in scientific output through the growth in our NRF rated intramural scientists, from 9 to 30 from 2014 to 2017; with two female A1 rated scientists in leadership roles. Our scientists are leaders as evidenced by high impact publications, citations per publication, first authored articles, and other scholarly activities.



## ISIZULU

### Isethulo

## SIKAMONGAMELI NE-CEO

Partnerships and collaborations remain critical to the advancement of cutting edge research and health innovation. One such public-private partnership is the agreement between the SAMRC and Beijing Genomics Institute to establish the first in Africa, Genomics Sequencing Facility – the African Genomics Centre. The Centre will be an important national asset to contribute to the better understanding of factors that impact the health of South Africans. This novel field of research harnesses the science of genomics for personalised medicine.

Key collaborations have been critical for the SAMRC, these include the Cochrane African Network, to increase and promote the use of evidence-based healthcare in Africa. The Global Alliance for Chronic Diseases is also the first major collaborative research funding into non-communicable diseases, while the SAMRC partnership with Healthy Life Trajectories Initiative sets to promote research cooperation in Canada, China, India and Brazil. Among other significant country partnerships are those established in Senegal, Sweden, The Gambia, India, and Madagascar.

Headed by the Corporate Performance Office, the SAMRC's schools outreach programme provides a platform for seasoned scientists to interact with school children. In partnership with the Department of Education, school children are advised on careers in science and the work of the SAMRC in health research.

Through collective efforts, social movements such as March for Science open another opportunity to engage communities and various stakeholders on the importance of science. Investing in science is needed for the country's development as a healthy nation is needed to compete across global frontiers.

Thank you to the entire SAMRC team, all of you involved in science and those of you supporting our science endeavour. A huge word of gratitude to the citizens of South Africa who contribute to science by enabling us to conduct research to find health solutions for diseases that impact on the quality of life of South Africans.

Sincerely

**PROFESSOR GLENDA E. GRAY**

President & CEO: South African Medical Research Council

Njengoba Umkhandlu Wocwaningo Lwezokwelapha eNingizimu Afrika (SAMRC) usuzohlanganisa iminyaka engamashumi amahlanu, sizobonisa umthelela esinawo eNingizimu Afrika. Naphezu kwesimo sezimali esingesihle, i-SAMRC iye yabamba iqhaza ekuthuthukisweni kwezindlela ezintsha zokwelapha, yenza ucwaningo lwezokwelapha kanye nocwaningo lokuhumusha ukuze ithuthukise izinga lokuphila labantu baseNingizimu Afrika. Ukwenezela kulokho, sizimisele ekwakha isizukulwane esilandelayo sabacwaningi bezokwelapha.

Phakathi nonyaka wezimali ka-2017/18, umthelela we-SAMRC ungabonakala ngeqhaza lethu kwezesayensi, ukubambisana nabanye kuleli, nasemhlabeni jikelele, ukuthuthukiswa komthamo namasu olwazi lokuhumusha, okuhlanganisa ukusebenzisana nabenzi bemithetho nemiphakathi esiyisizayo. Lezi zinsika ezinomthelela zafinyeleleka ngokugxila ekusekeleni ngokuhlakanipha nasekwenzeni ucwaningo lwezokwelapha. Isayensi ayikwazi ukuphumelela ngaphandle kokwesekwa, njengezwe elisathuthuka ukunaka kakhulu ucwaningo lwezokwelapha nokuthuthukisa isayensi kusemqoka.

Ushintsho luyingxeny ebalulekile yentuthuko ukuze sibe nomphakathi ohlangene nochumayo kwezomnotho. Sibheka ushintsho njengesiqondiso sokwakha umphakathi wesayensi ophumelelayo eNingizimu Afrika. Ushintsho kwisayensi, ngokusekela ukungafani esizukulwaneni sethu esisha sososayensi, ngelinye lamasu e-SAMRC okugcwalisa isithembiso sempilo ende nenhle kubo bonke abantu baseNingizimu Afrika.

Njengengxeny yohlelo lwethu loshintsho kanye nocwaningo lokuthola okusha, siye sandisa inani labafundi abenza izifundo ze-masters ne-doctoral abasekelwa yizinhlelo zethu, kanye nokwakha inhlanganisela yalabo abaqeqeshelwa umsebenzi kanye nodokotela okuhlanganisa uhlelo lwabafundi lukazwelonke lwezokwelapha, okuwukubambisana kukahulumeni nezinkampani ezizimele.

Ukuze isekele UMnyango wezeMpilo kaZwelonke ekugcwaliseni isithembiso sempilo enhle kubo bonke, i-SAMRC ixhasa ngokwezimali ucwaningo lwezifo ezihlupha iNingizimu Afrika. I-SAMRC inikeza okungenani izindlela ezingu-20 zokuxhaswa ngezimali ngonyaka, okuphumela

ekutheni kube nezinhlelo eziqhubekayo ezixhaswayo ezicishe zibe ngu- 400 esikhathini esingaba unyaka kuya eminyakeni emihlanu.

Siye sabonisa ukuthi sihamba phambili emikhiqizweni yezesayensi ngokukhula kososayensi bethu abasebenza ndawonye abasezingeni le-NRF, sisuka ku-9 siya ku-30 kusukela ngo-2014 kuya ku-2017; ososayensi ababili abangabesifazane banesilinganiso sika-A1 ezikhundleni zobuholi. Ososayensi bethu bangabaholi njengoba sifakazelwa izincwadi ezithinta abantu abaningi, ukucashunwa encwadini ngayinye, izihloko ababhale okokuqala kuzo, kanye neminye imisebenzi yokucwaninga.

Ukubambisana kuhlala kusemqoka ekuthuthukiseni ucwaningo oluhamba phambili lokuthuthukiswa kwezokwelapha. Okunye ukubambisana okunjalo phakathi kukahulumeni nezinkampani ezizimele yisivumelwano phakathi kwe-SAMRC ne-Beijing Genomics Institute kwenziwe isikhungo sokuqala e-Afrika se- Genomics Sequencing – i-African Genomics Centre. Lesi sikhungo sizodlala indima ebalulekile ezweni lonke ukuze siqonde kangcono izinto ezinomthelela empilweni yabantu baseNingizimu Afrika. Lolu hlobo locwaningo luthatha isayensi ye-genomics luyisebenzisele ukwenza imithi esiza abantu.

Ukubambisana okuyinhloko bekulokhu kusemqoka kwi-SAMRC, lokhu kuhlangukisa i-Cochrane African Network, ukuze kukhuliswe futhi kuthuthukiswe ukusetshenziswa kwendlela yokwelapha esekelwe ebufakazini e-Afrika. Ukubambisana Kwamazwe Omhlaba Wonke Ukuze Kulwiswane Nezifo Ezingamahlala Khona ingolunye ucwaningo lokuqala olukhulu lokubambisana oluxhaswayo lwezifo ezingathathelwana, kuyilapho ukubambisana kwe-SAMRC ne-Healthy Life Trajectories Initiative kuhloselwe ukubambisana kokucwaninga e-Canada, China, India nase-Brazil. Okunye kokubambisana okuphakathi kwamazwe yilokho okwenziwe ne-Senegal, Sweden, The Gambia, India, ne-Madagascar.

Siphinde sibe yingxenye ye-BRICS TB Research Network, okuyinto ehloselwe ukulungisa izinkinga ze-TB ku-BRICS nokuthola izindlela ezingasiza ekutholeni izixazululo kuwo la mazwe. L Lo mgomo ohlanganisa amazwe amaningi uhlose ukuthuthukisa ucwaningo nokutholakala kwezindlela

ezintsha emkhakheni we-TB, ngokubambisana kwe-BRICS okuhloselwe ukwenziwa nokuphuculwa kwezindlela zokuhlonza, imishanguzo, imilaliso nemithi, ukulawulwa kokusabalala kwamagciwane.

Ngosizo loxhaso lwe-SAMRC, ilayisensi kazwelonke ye-Cochrane Library, eyaqala ukusebenza ngo-01 June 2017, yabangela ukwanda ngo-35% ekudawunilidweni kokubukezwa kwe- Cochrane ngo-2017, uma kuqhathaniswa nokwangesikhathi esifanayo ngo-2016. Ingingizimu Afrika ibe yizwe lokuqala elingekho eNtshonalanga Yurophu, eNyakatho Melika nase-Australia ukuba ithole ilayisensi kazwelonke, i-India nayo yenze okufanayo.

Luqondiswa yi-Corporate Performance Office, uhlelo lwe-SAMRC lokusiza izikolo luveza ithuba lokuba ososayensi abangomakadebona bahlangane nezingane zesikole, ngokubambisana noMyango Wezemfundo, izingane zesikole zichazelwa ngemisebenzi yezesayensi nomsebenzi wocwaningo lwezokwelapha lwe-SAMRC.

Ngokubambisana, izinhlangano zomphakathi njenge-March for Science kuye kwavulwa elinye ithuba lokuhlangana nemiphakathi kanye nabaphathi bezinkampani mayelana nokubaluleka kwesayensi. Ukutshala kwezesayenzi kuyadingeka ukuze izwe libe nempilo enhle okuzolisize lincintisane kahle namazwe omhlaba.

Sibonga lonke ithimba le-SAMRC, nonke nina enibambe iqhaza kwi-sayensi nalabo abasekela imizamo esiyenzayo kwezesayensi. Sibabonga kakhulu abantu baseNingizimu Afrika afaka isandla ekusekeleni isayensi ngokusivumela ukuba senze ucwaningo ukuze sithole izindlela zokwelapha izifo ezithinta ukuphila kwabantu baseNingizimu Afrika.

Ozithobayo



**PHROFESA GLENDA E. GRAY**

Umongameli Ne-CEO: Umkhandlu Wocwaningo Lwezokwelapha eNingizimu Afrika

## MANTŠU A KETAPELE A MOPRESITENTE LE CEO

Bjalo ka ge Khansela ya Dinyakišišo tša Booki mo Afrika Borwa South African Medical Research Council (SAMRC) e lebile go ngwaga wa bo-50, re tšile go bontšha kamoo re kgomilego Afrika Borwa. Go sa šetšwe go tekateka ga ikonomi, SAMRC e utollotše mekgwa e mofsa ya tša kalafo, ya atlega go direng dinyakišišo tša kalafo le go di toloka go kaonefatšha boleng bja bophelo go Mafrika Borwa. Go oketša moo, re itlamilile gore re tla kaonefatšha moloko o mofsa wa banyakišiši ba tša kalafo.

Ngwageng wa ditšhelete wa 2017/18, tutuetšo ya SAMRC e ka hlahoswa ka ditšweletšwa tša rena tša thutamahlale, go dirišana le batho ba mo nageng le ba moše wa mawatle, go oketša mešomo yeo re ka e dirago le mekgwa ya go toloka tsebo ya rena, yeo e akaretšago go dirišana le bahlami ba pholisi le ditikologo tšeo re šomago go tšona. Merero ye e megolo e ile ya atlega ka ge re be re šeditše mekgwa ya go hwetša tšhelete ya go dira dinyakišišo tša maphelo. Thutamahlale e ka se fihlwe, ka ge re le nageng yeo e kaonefalago, go bohlokwa gore re diriše tšhelete go nyakišišeng ka tša maphelo le go diriša mekgwa e fetofetogago ya thutamahlale.

Diphetogo tše di fetoga karolo e bohlokwa ya go fihlelela tikologo e kaone le e phelago gabotse ka ikonomi. Re bona diphetogo tše e le leswao le lebotse la go godiša karolo e kgolo ya thutamahlale ya tša maphelo mo Afrika Borwa. Go dira diphetogo tša thutamahlale, ka go thekga diphetogo tša moloko o mofsa wa thutamahlale, ke e nngwe ya ditholosi tša bohlokwa tša SAMRC tša go fihlelela kholofetšo yeo re dirilego ya bophelo bjo bo botse le bjo botelele go Mafrika Borwa.

E le karolo ya morero wa rena wa go fetoga le lenaneo la go nyakišiša, re okeditše palo ya diithuti tša bongaka le dingaka tšeo di thekgwago ke lenaneo la rena, gotee le go hlama sehlopha se se tiilego sa barutwana ba bongaka le booki tšeo di akaretšago lenaneo la barutwana ba booki, e lego tirišano ya maemo a bosetšhaba.

Gore re thekge Lefapha la tša Maphelo go fihleleleng kholofetšo e dirilwego ya bophelo bjo bo botse le bjo botelele go bohle, SAMRC e tla lefelela ditshenyagalelo tša dinyakišišo mererong ya malwetši a imelago Afrika Borwa. SAMRC e nea mekgwa e ka bago e 20 ya ditšhelete ka ngwaga, e lego seo se feleletšago ka gore go dule go na le diprojeke tše 400 tšeo di sa kgaotšego ngwageng o tee go ya go e mehlano.

Re kgonne go fihlelela merero e mekaone ya thutamahlale ka baka la kgolo ya NRF ya rena e diriša thutamahlale ya ka gare, go tloga go 9 go ya go 30 go tloga ka 2014 go ya go 2017; ka basadi ba babedii ba A1 bao ba swaelwego e le borathutamahlale mererong ya bolaodi. Borathutamahlale ba rena ke baetapele ka ge seo se bonwa go dikgatišo tše di kgahlišago, ditsopolwa ka dikgatišong, dihlogo tšeo ba ingwaletšego tšona le mediro e nngwe ya boithuti.

Go dirišana go dula go le bohlokwa gore go godišwe mekgwa e mekaone ya go dira nyakišišo le go tšweletša dihlangwe tša maphelo. E nngwe ya ditirišano tšeo tša boditšhaba ke tumelanelano e lego magareng ga SAMRC le Beijing Genomics

Institute e tla thomago mo Afrika, Genomics Sequencing Facility – the African Genomics Centre. Senthara ye e tla ba sedirišwa sa bohlokwa sa boditšhaba go kaonefatšeng kweišo ya dikarolo tšeo di kgomago tša maphelo go Mafrika Borwa. Pukwana ye ya nyakišišo e godiša thutamahlale ya thutaphedi gore go hlangele dihlangwe.

Badirišane ba konokono ba SAMRC ba be ba fokola, ba akaretša Cochrane African Network, ba palelwa ke go bapatšha go dirišwa ga tlhokomelo ya tša maphelo e theilwego phihlelong bakeng sa Afrika. Global Alliance for Chronic Diseases ke batheki ba mathomo ba bagolo ba nyakišišo malwetšing ao go sa bolelwego ka wona gantši, mola tirišano ya SAMRC le Healthy Life Trajectories Initiative e kgothaletša go dira nyakišišo dinageng tša Canada, China, India le Brazil. Dinaga tše dingwe tša bohlokwa tša tirišano tšeo di akaretša Senegal, Sweden, The Gambia, India, le Madagascar.

E bile re karolo ya BRICS TB Research Network, yeo e ikemišeditšego go swaragana le bothata bja TB ka BRICS le go tsoa didirišwa tša go hwetša tharollo ya kgauswi dinageng tšona tše. Morero wo wa dinaga tše mmalwa o hlametšwe go godiša nyakišišo le go lemoša batho ka TB, go dirišwa tirišano ya BRICS go lebiša go hlangele le go tšweletšwa ga ditlahlobo, dihlangwe, ditagi le mereana, go laola go fetelwa le go hlakomela balwetši.

Se se kgonega ka thekgo ya ditšhelete ya SAMRC, laesentshe ya boditšhaba ya Cochrane Library, yeo e thomilego go šoma ka di-01 June 2017, e dirile gore go be le koketšego ya 35% ya go taoneloutwa ga mongwalo wa ditlahlobo tša Cochrane ka 2017, ge e bapšwa le ngwaga wa 2016. Afrika Borwa ke naga ya pele ka ntle ga Bohlabela bja Yuroopa, Borwa bja Amerika le Australia go tšweletša laesentshe ya boditšhaba, India le yona e sa tšwa go dira se.

E etilwe pele ke Corporate Performance Office, dikolo tša SAMRC di fihlelela mananeo ao a fanago ka lefelo la go šomela borathutamahlale gore ba dirišane le bana ba dikolo, ka tirišano ya Lefapha la tša Thuto, bana ba dikolo ba hlohletšwa go ithutela science le mešomo ya SAMRC go nyakišišo ya tša kalafo.

Ka maiteko a mohlakanelwa, go kaonefatšwa ga setšhaba bjalo ka Mongwanto wa Thutamahlale go bula sebaka se sengwe sa gore batho ba setšhaba le bašomi ka kakaretšo ba tsebe ka bohlokwa bja thutamahlale. Go fetša nako e ntši o ithuta ka tša thutamahlale ke selo sa bohlokwa gore naga e kaonefatšwe e be setšhaba sa tša maphelo gore e phadišane le dinaga tše dingwe.

Re leboga sehlopha sa SAMRC, ka go tšea nako se šomana le tša thutamahlale gotee le lena bao le thekgago maiteko a rena a thutamahlale. Re leboga gape badudi ba Afrika Borwa bao ba tsenetšego tša Thutamahlale ka go re dumelela go dira nyakišišo ya go hwetša ditharollo tša maphelo malwetšing ao a kgomago boleng bja tša maphelo go badudi ba Afrika Borwa.

Mohlomphegi



**PROFESSOR GLENDA E GRAY**

Mopresitente le CEO: South African Medical Research Council

# WHY WE EXIST

## *Our Mandate*

The mandate of the South African Medical Research Council (SAMRC), in terms of the MRC Act 58, 1991 (as amended) is to improve the health and quality of life of South Africans. This needs to be realised through research, development and technology transfer.

### IN BRIEF

The SAMRC was established in 1969 to conduct and fund health research and medical innovation. We focus on the top ten causes of death and disability and associated risk factors. We acquire the most accurate health information and provide policy makers with the tools to make informed healthcare policy decisions to enhance the quality of life for the people in South Africa.

### OUR VISION

Building a healthy nation through research and innovation.

### OUR MISSION

To improve the nation's health and quality of life by conducting and funding relevant and responsive health research, development, innovation and research translation.

## Umsebenzi Wethu

Umsebenzi Womkhandlu Wocwaningo Lwezokwelapha eNingizimu Afrika (SAMRC), ngokuvumelana ne-MRC uMthetho 58, 1991 (othuthukisiwe), ukuphucula impilo nezinga lokuphila kwabantu baseNingizimu Afrika. Lokhu kudingeka kwenzeke ngocwaningo, ukudluliselwa kwemikhiqizo nezobuchwepheshe.

### NGAMAFUPHI

I-SAMRC yasungulwa ngo-1969 ukuba yenze futhi ixhase ucwaningo lwezokwelapha nokuthola izindlela ezintsha zokwelapha. Sigxila ezizathwini eziphezulu eziyishumi zokufa nokukhubazeka kanye nobungozi obuhlobene nalokho. Sithola imininingwane enembile yezempilo, zinikeze abenzi bemithetho amathuluzi angabasiza benze izinqumo ezimayelana nemithetho yempilo benolwazi ukuze kuphuculwe izinga lokuphila kwabantu baseNingizimu Afrika.

### UMBONO WETHU

Ukwakha isizwe esinempilo ngokucwaninga nokuthola izindlela ezintsha

### UMGOMO WETHU

Ukuthuthukisa izinga lempilo lesizwe nokuphila kwaso ngokwenza nokuxhasa ucwaningo lwezokwelapha oluyimfuneko nolufanele, ukuthola okusha nokuhunyushwa kocwaningo

# SEPEDI

## Molao Wa Rena

Molao wa Khansale ya Dinyakišišo tša Booki mo Afrika Borwa (SAMRC), go ya ka molao wa MRC Act 58, 1991 (ka ge o fetošitšwe), ke go kaonefattša maphelo le boleng bja maphelo bja Mafrika Borwa. Se se hloka gore go dirwe nyakišišo, go kaonefatšwa le go fetola thekinolotši.

### KA BOKOPANA

SAMRC e hlamilwe ka 1969 go hlama nyakišišo ya go hwetša tšhelete ya tša maphelo le go fetola tša kalafo. Šedi ya rena e go dilo tše lesome tšeo di bakago malwetši a mantši le bogole le dikotsi tšeo di sepedišanago le tšona. Re hwetša tsebišo e kaonekaone ya tša maphelo, ra nea dipholisi ka tholosi go dira phetho e kaone ya tša maphelo go koanefatša boelng bja tša maphelo go Mafrika Borwa.

### PONO YA RENA

Go bopa setšhaba se phetšego gabotse ka nyakišišo le diphetogo

### MAIKEMIŠETŠO A RENA

Go kaonefatša bophelo bja setšhaba ka go dira nyakišišo e thekgwago ka ditšhelete le e bohlokwa ya tša maphelo, go kaonefatša, go fetola le go toloka nyakišišo

# Responding to the four major health epidemics facing South Africa

South Africa faces a cocktail of four colliding epidemics. This means that, unlike most countries on the globe, a majority of South Africans and the country's health system is simultaneously burdened by four major diseases namely: **Maternal, newborn and child health; HIV-AIDS and TB; Non-communicable diseases (NCDs) and Violence and Injury**. Although SA's burden of disease profile looks dire, data from our Burden of Disease Research Unit has reflected a few milestones in not only reducing the country's disease burden but accurately measuring it so as to provide relevant interventions.

## MATERNAL, NEWBORN AND CHILD HEALTH

The burden of maternal, newborn and child health on SA is three times above average for comparable countries.

Our research shows that the under 5 mortality rate has decreased to **34** per **1000** livebirths in 2016 from **80** per 1000 livebirths in 2003.

Interventions by community health workers in community treatment could decrease deaths to under **200 000** over ten years.



## NON-COMMUNICABLE DISEASES (NCDs)

Non-Communicable Diseases, as a group, account for the highest number of deaths in SA.

Four major NCDs: cancers, cardiovascular diseases, chronic respiratory diseases and diabetes.

Our first-of-its-kind research shows that more than **70%** of women in sub-Saharan Africa are overweight and obese and five out of every **10** adults in South Africa suffer from hypertension.



SA is estimated to have the biggest burden of TB in the world – a sizeable number of HIV/AIDS deaths are associated with TB.

We have conducted research that has mapped the true burden of MDR/XDR TB in the country allowing accurate and concerted interventions.

The roll-out of ART and earlier PMTCT interventions has resulted in a steady decline in HIV mortality: from **300 000** in 2006 to **153 000** in 2012.



## HIV/AIDS AND TB

SA is five times above average for homicide. Interpersonal violence accounts for a considerable amount of premature deaths in SA.

Between 1997 and 2012, there was a **52%** reduction in death rates caused by interpersonal violence.

Data from our Burden of Disease Research Unit shows that interpersonal violence ranks as the number two cause of premature death in Gauteng and the Western Cape.



## VIOLENCE AND INJURY



# OUR RESEARCH

## Leading causes of death in South Africa

The scope of the SAMRC's research includes basic laboratory investigations, clinical research and public health studies. Our research focuses on the following top 10 causes of death in South Africa

Rank	Cause	No. of deaths	% deaths
1	 HIV/AIDS	153 661	29.1
2	 Cerebrovascular disease	39 830	7.5
3	 Lower respiratory infections	25 977	4.9
4	 Ischaemic heart disease	24 969	4.7
5	 Tuberculosis	23 817	4.5
6	 Diabetes mellitus	18 894	3.6
7	 Hypertensive heart disease	18 755	3.5
8	 Interpersonal violence	18 741	3.5
9	 Road injuries	17 597	3.3
10	 Diarrhoeal diseases	16 349	3.1
<b>Top 10 causes</b>		<b>358 590</b>	<b>67.8</b>
<b>Total</b>		<b>528 947</b>	<b>100.0</b>

Source: Pillay-van Wyk et al, Lancet Global Health 2017.

# OUR FUNDING

The SAMRC continues to fund research that is based on local development priorities, while focusing on developing scientific capacity and diversity

## GRANTS, INNOVATION & PRODUCT DEVELOPMENT

The Grants, Innovation and Product Development Division (GIPD) oversees more than 200 grants ranging from SAMRC-specific grant funding to collaborative grant funding with local and international partners.

TOTAL VALUE OF FUNDING ALLOCATED TO RESEARCH & INNOVATION DURING 2017/18:  
**R198 203 960.21**

Focus areas: Drug discovery, vaccine discovery, precision medicine, medical devices, big data, innovation technologies, population health.

## INVESTING IN HISTORICALLY UNDER-RESOURCED INSTITUTIONS

Under the management of the Research Capacity Development (RCD) Division, the SAMRC identified and invested **R 8 000 000** in previously resource constrained institutions namely:

- University of Fort Hare
- University of Limpopo
- University of Venda
- Walter Sisulu University
- University of Zululand
- University of the Western Cape
- Mangosuthu University of Technology
- Sefako Makgatho Health Sciences University

## SELF-INITIATED RESEARCH GRANTS

For more than a decade, the SAMRC has awarded funding and supported competitive investigator-initiated research projects. These awards are targeted at early stage investigators and mid-career investigators who are offered the opportunity to establish their careers while conducting relevant science.

TOTAL VALUE OF FUNDING ALLOCATED TO RESEARCH & INNOVATION DURING 2017/18:  
**R25 000 000.00**



# OUR IMPACT

The SAMRC has adhered to its mandate of conducting responsive research that will advance the lives of South Africans. Over the 2017/18 reporting period we have made strides in new research in non communicable diseases (NCDs), Gender-based violence, HIV vaccine development and TB diagnostics and drug development.



## SAVING LIVES AT BIRTH

Estimates show that more than half of the global maternal deaths and more than three-quarters of neonatal deaths occur in sub-Saharan Africa. Although South Africa has in the past decade made some progress in reducing maternal and child mortality, the levels remain unacceptably high. The leading causes of death in children under five years in South Africa include HIV/AIDS, diarrhoeal disease, lower respiratory infections, birth asphyxia, and injuries.

The SAMRC's Strategic Health Innovation Partnerships (SHIP) has partnered with Grand Challenges Programmes of the Gates Foundation in various countries to conduct research on maternal and child health. The projects were specifically chosen to align with the Gates' Foundation's "Saving Lives at Birth." The current portfolio includes four projects in areas such as gestational diabetes, prevention and prediction of pre-term birth, rapid testing for preeclampsia and intergrating home-based packages for early childhood interventions.

The SAMRC encourages cross-border projects that are designed to tackle the continent's shared maternal health challenges. We believe that these partnerships will work to create local and global projects and accelerate knowledge generation that will curb maternal and child mortality on the African continent.



## JOURNEY TOWARDS AN HIV VACCINE

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We are committed to preventing HIV/AIDS and as such have joined our partners and embarked on two of the largest HIV vaccine trials in sub-Saharan Africa. In 2016, the SAMRC partnered with a number of researchers to launch the world's first HIV vaccine efficacy study in seven years at 15 research sites across the country.

The study, called HVTN 702, aims to establish whether an experimental vaccine regimen safely prevents HIV infection among South African adults. It involves a new version of the only HIV vaccine candidate yet shown to provide some protection against the virus and enrolled 5 400 men and women, making it the largest and most advanced HIV vaccine clinical trial to take place in South Africa. The study was funded through the HIV Vaccine Trials Network (HVTN).

In 2017, the SAMRC partnered with more researchers to embark on a new proof-of-concept study called Imbokodo, which enrolled 2,600 HIV-negative women aged 18 to 35 years in sub-Saharan Africa and was implemented at clinical trial sites through the National Institute of Allergy and Infectious Diseases (NIAID) also funded by the HIV Vaccine Trials Network (HVTN).

Results from the ongoing HVTN 702 study are expected in late 2020 while results from the Imbokodo study are expected in 2021.



## STEPPING UP TO END TB

Tuberculosis is among the top ten causes of death in South Africa and the SAMRC is compelled to conduct responsive research to decrease this disease burden. We have, through our internal and external research units managed to put TB under the spotlight by identifying gaps in the prevention and management of the epidemic.

**Missing cases:** The SAMRC is part of a task team that has been mandated, by the National Department of Health, to develop strategies to find missing TB cases in SA. These strategies include optimised screening approaches, enhanced contact tracing for TB cases, enhanced case detection amongst key populations and improving algorithms and tools. The SAMRC's *TB Free Through Research & Innovation Unit*, based at UCT, estimated that out of an estimated 10 million cases almost 40% were unreported / undiagnosed. In response to these missing cases, the Unit sought to research the feasibility of DNA-based detection tests in improving the battle strategy against TB. The research suggests that point-of-care technologies such as the portable GeneXpert could effectively be used to find cases and limit the transmission of TB in communities.

**Drug Resistance:** TB researchers suggest that urgent action is needed in addressing the rising transmission and infection rates of drug resistant TB. SAMRC-funded research used DNA sequencing and aerosol sampling technology to track more than 273 patients with XDR-TB in two Western and Northern Cape hospitals over a period of six years. They found that of the two thirds of patients who were discharged from the hospital, most of these ended up with poor outcomes.

**Childhood TB diagnosis:** At least 1 million children 15 years old or younger become ill with TB every year, and 250,000 children die from infection. TB is particularly difficult to diagnose in children as the most commonly available tests are done on sputum, which many children cannot produce. Furthermore, children often have disease with few bacteria, so tests need to be extremely sensitive to detect them. TB in children is usually diagnosed from samples that are obtained with invasive procedures and with methods that take weeks to provide a result and are only available in few laboratories. This leads to delayed therapy, suffering and – too frequently – death. Our research has shown how Cepheid's Xpert Ultra assay (a sensitive molecular stool test) can be performed on easily accessible children's stool.

Currently, a disposable Stool Processing Kit (SPK) that can be used as an accessory to molecular TB tests such as the Xpert Ultra assay, enabling simple processing of stool specimens from babies and children is being developed.



## NON-COMMUNICABLE DISEASES – A SILENT KILLER

Non-communicable diseases (NCDs) are a leading cause of death worldwide, and in South Africa many of these deaths result from cardiovascular and metabolic diseases. It is estimated that about 41 million people per year die from NCDs and 90% of people who die before the age of 60 are from middle and low income countries such as South Africa.

At present, there are four major NCDs that pose a severe challenge to South Africans. They are cancers, cardiovascular diseases, chronic respiratory diseases and diabetes and they share common risk factors: tobacco use, physical inactivity, harmful use of alcohol and an unhealthy diet. Development, industrialisation, urbanisation and aging are also the major drivers of the NCD epidemic in South Africa.

Our first-of-its kind research (Obesity in Africa: Trends Analysis) has shown that South Africa has the highest rate of people who are overweight and obese in sub-Saharan Africa, with more than 70% of women being overweight. Research has also proven that five out of every 10 adults in South Africa suffer from hypertension. The SAMRC's Non-Communicable Diseases Research Unit, is currently conducting five NCD related research which focuses on NCDs risk factors in Africa; Comorbidities of childhood obesity in South Africa as well diabetes prevention strategies on the continent.



## SEXUAL VIOLENCE COMMON IN THE MURDER OF WOMEN AND CHILDREN

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A study detailing the prevalence of sexual homicides in South Africa shows that sexual violence took place in one in five (494 of 2670) women who were killed in 2009. Similarly, for the same period, one in twelve (104 of 1277) child homicides had evidence of sexual violence as part of the murder.

The mortuary-based study is the second of its kind and is among a few reporting on sexual homicide. It has revealed that sexual violence homicide incidents among women have increased from 16% in 1999 to 19% in 2009. The study showed a higher rate of sexual homicides in female children as opposed to male children.

Although male children represented a 64.2% proportion of all children murdered over the period, female children were the majority among the child sexual homicide victims (8% male children and 92% female children). The age profile of the child victims showed that children between the ages 13 and 18 represented more than 50% of child sexual homicide cases.

Globally, sexual homicide has been described as a rare event in many countries such as the United States where under 1% of all homicides (male and female) are identified as sexual homicides and in the United Kingdom where 3.7% of those found guilty of homicide included a sexual violent component. However sexual homicides are not rare events in South Africa with approximately 500 adult female cases and 104 children cases in 2009.

The SAMRC, in trying to monitor the trends and prevalence of sexual violence against women and children in South Africa, has conducted a number of important studies – one of them being the Rape In Justice study published in 2017. Commissioned by the National Prosecution Authority (NPA), the Rape In Justice study highlights how the gaps in the country's criminal justice system continue to encourage unresolved cases of rape with only 340 guilty verdicts in 3 952 reported rape cases.

Essentially, the Rape In Justice study highlights just one of the many aspects of the epidemic that is sexual violence against women and children, it is hoped that the results of the second Sexual Homicide study will further emphasise the urgency with which perpetrators need to be prosecuted.

# SUPPORT FUNCTIONS

## SAMRC HUMAN RESOURCES MANAGEMENT

Human Resources Division's primary function is to ensure that all staff have the necessary skills set and passion to enable the SAMRC to deliver on its mandate.

### HIGHLIGHTS FOR 2017/18 REPORTING PERIOD



Extensive training provided to SAMRC managers



Wellness Programme instituted to ensure that all staff have access to health and wellness



Career progression and advancement for scientists finalised - 62 scientists have advanced

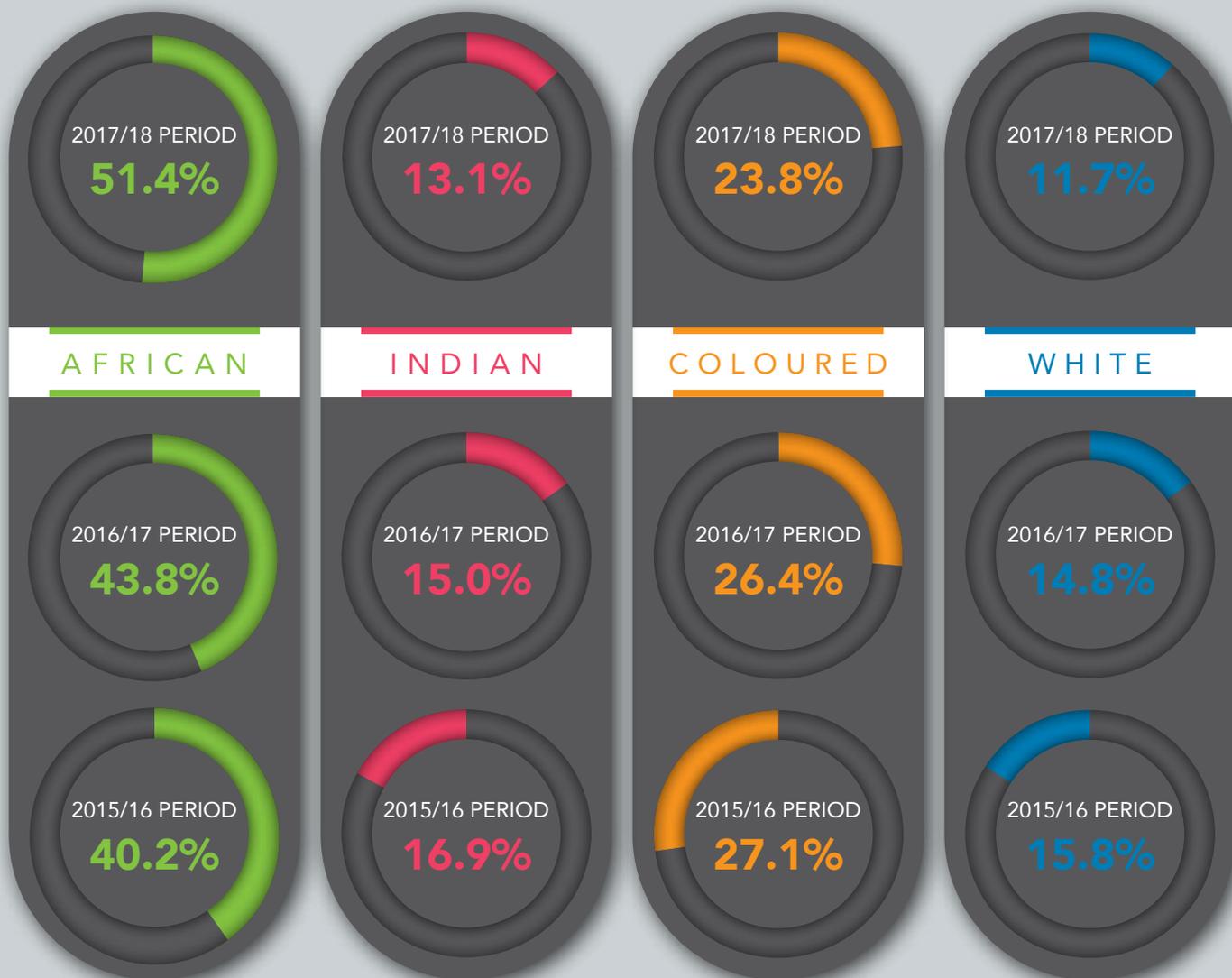


Three Deputy Director posts were filled

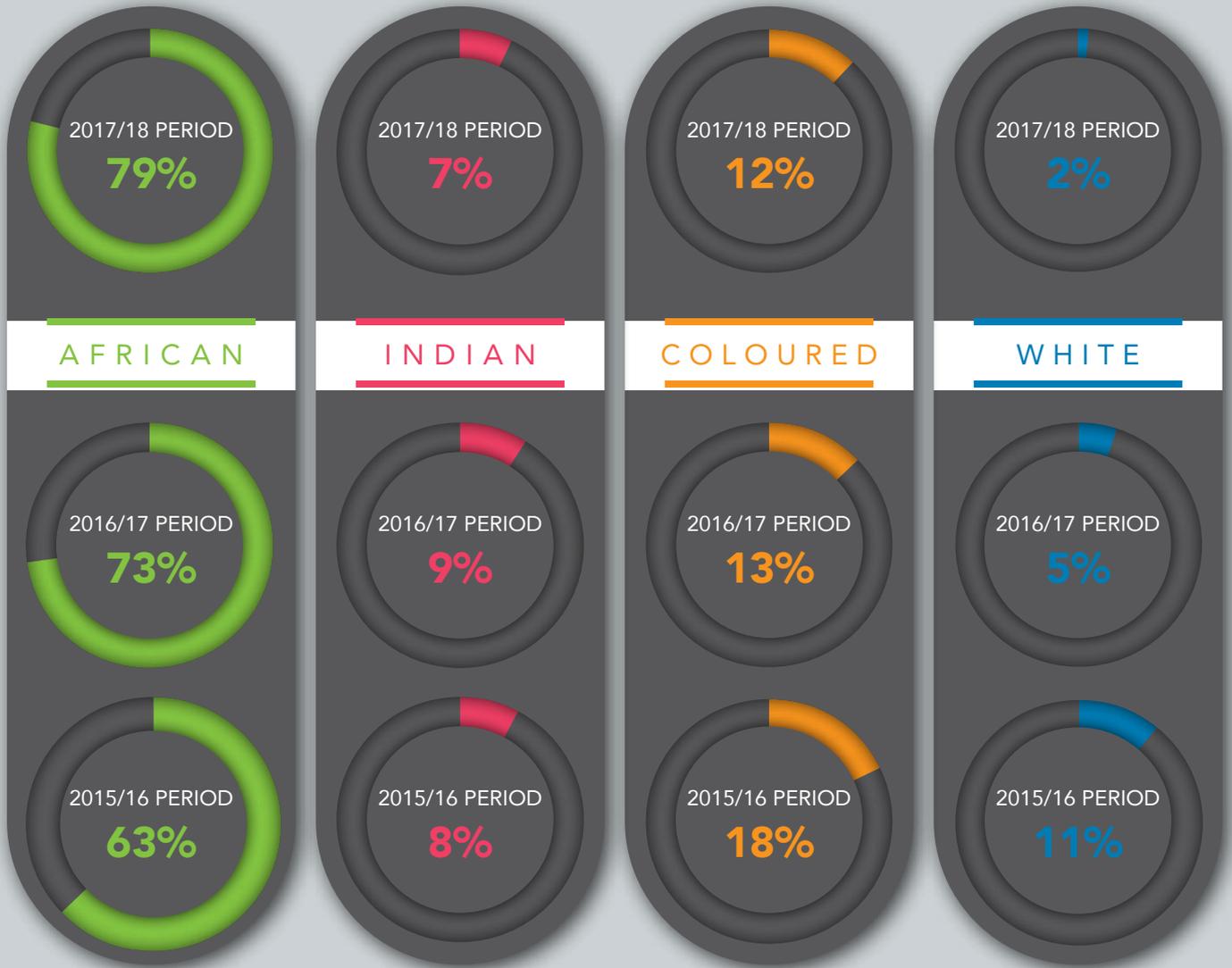


Recruitment turnaround time shortened to below the target of 32 days.

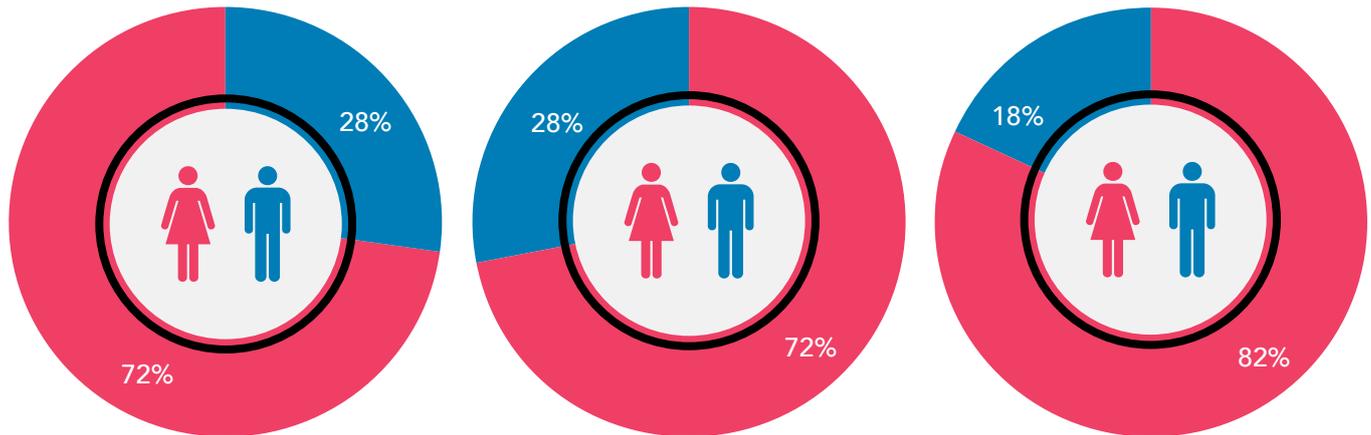
# SAMRC DEMOGRAPHIC PROFILE



# APPOINTMENTS MADE BY RACE



## APPOINTMENTS BY GENDER



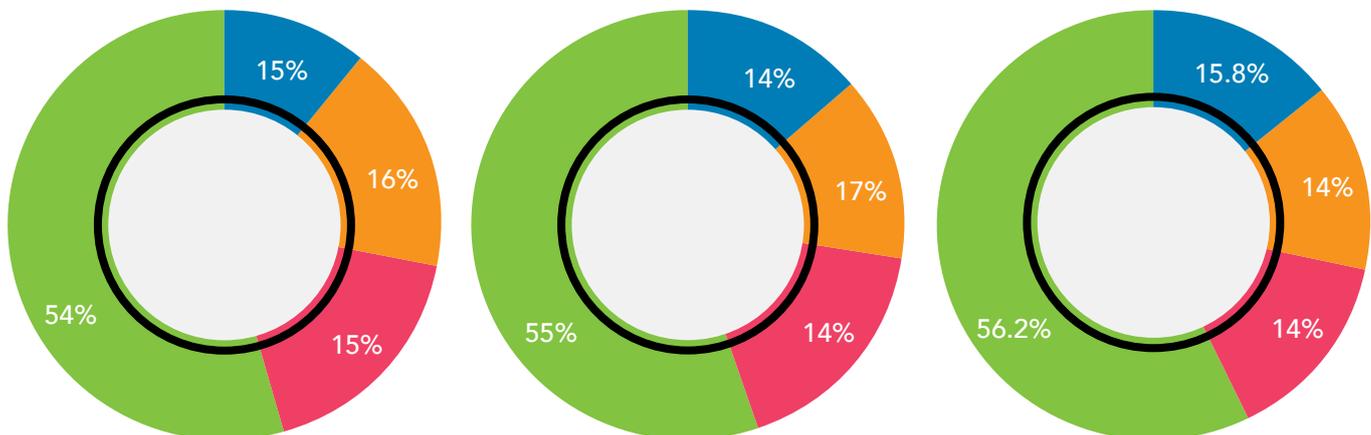
2017/18 PERIOD

2016/17 PERIOD

2015/16 PERIOD

See page 132 of 2017/18 Annual Report for stats of this period

## SENIOR MANAGEMENT BY RACE



● African ● Coloured ● Indian ● White

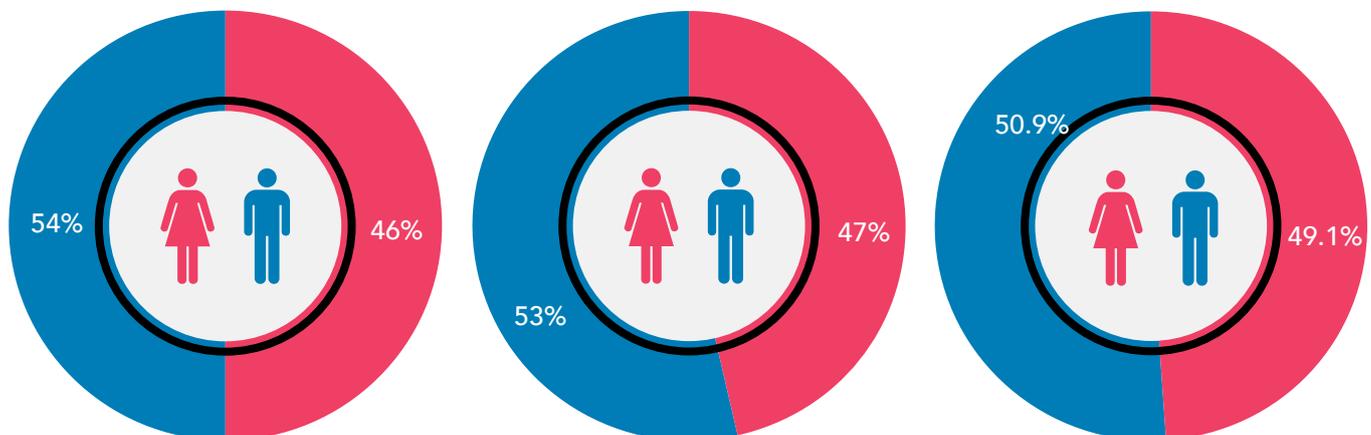
2017/18 PERIOD

2016/17 PERIOD

2015/16 PERIOD

See pages 138-9 AR of 2017/18 stats

## SENIOR MANAGEMENT BY GENDER



2017/18 PERIOD

2016/17 PERIOD

2015/16 PERIOD

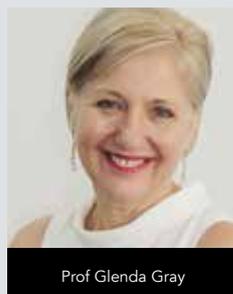
See page 138-9 of 2017/18 AR for stats

# GOVERNANCE

SAMRC is a section 3A entity accountable to Parliament for its performance and budget. In reporting to government, the Minister of the Department of Health is the executive authority for the SAMRC in all government and parliamentary matters. The Minister is also responsible for the appointment of Board Members.

Corporate governance embodies processes and systems by which public entities are directed, controlled and held to account. In addition to legislative requirements based on a public entity's legislation and Companies Act, corporate governance (with regard to public entities) is applied through the Public Finance Management Act and the principles contained within the King Report on Corporate Governance.

## OUR BOARD MEMBERS



### Responsibilities of the Board include;

- Corporate governance of the SAMRC
- Fiduciary and compliance to legislative requirements e.g. Public Finance Management Act (PFMA)
- Ensuring compliance with legislative requirements e.g. appointment of the SAMRC President & CEO

### Responsibilities of the President & CEO include;

- Implementation of the Board's mandate
- Chairing the Executive management Committee, which is responsible for the day-to day management of the SAMRC

# SAMRC EXECUTIVE MANAGEMENT COMMITTEE



Prof Glenda Gray  
*President & CEO*



Prof Jeffrey Mphahlele  
*Vice President for Research*



Prof Rachel Jewkes  
*Executive Scientist: Research Strategy*



Mr Nicholas Buick  
*Chief Financial Officer*



Prof Richard Gordon  
*Executive Director: Grants, Innovation  
& Product Development*



Mr Mzimhle Popo  
*Legal Counsel*



Dr Mongezi Mdhuli  
*Chief Research Operations Officer*

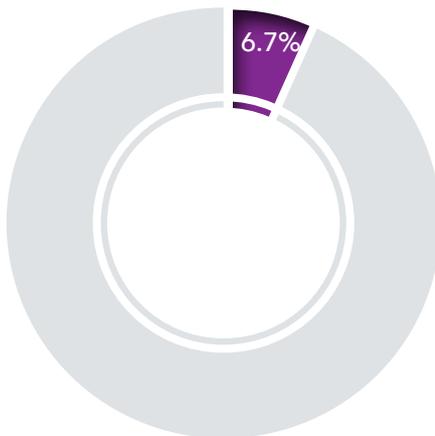


Mr Brinton Spies  
*Executive Director: Human Resources*

# FINANCIAL FUNCTIONS

## FINANCIAL PERFORMANCE FOR THE 2017/18 REPORTING PERIOD

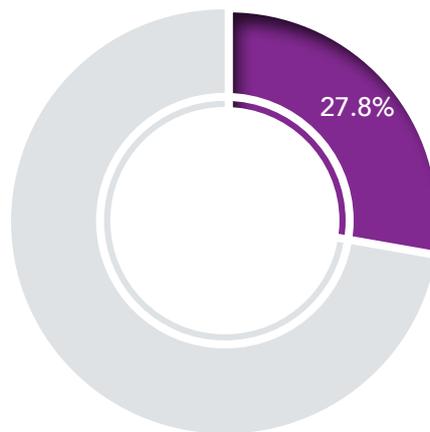
STRONG FINANCIAL PERFORMANCE FOR 2017/18 REPORTING PERIOD RESULTED IN



REVENUE

**6.7%**

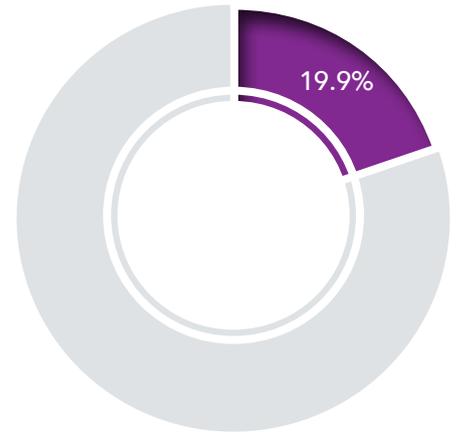
R 937 789 to R 1 000 857



CONTRACT INCOME

**27.8%**

R 461 418 to R 360 955

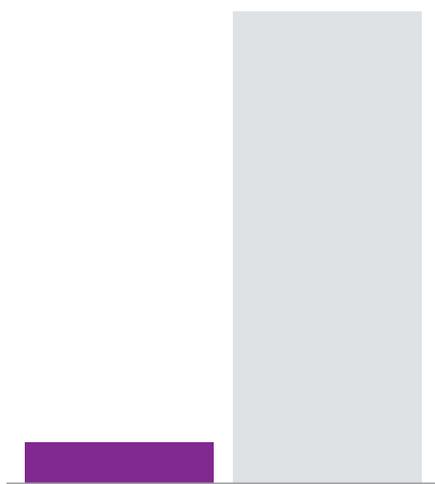


INVESTMENT INCOME

**19.9%**

R 42 270 to R35 266 897

OPERATING SURPLUS



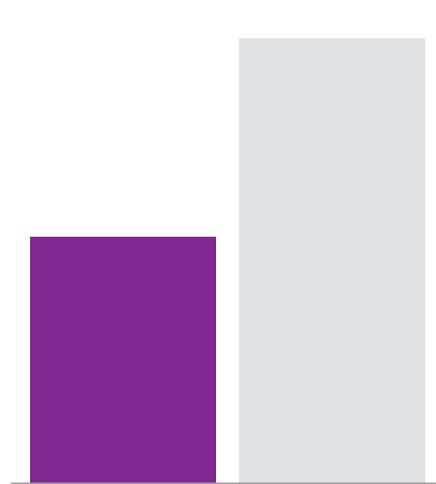
**-R88 246 900**

OPERATING DEFICIT OF

**R2 649 142**

IN 2016/17

NETT SURPLUS

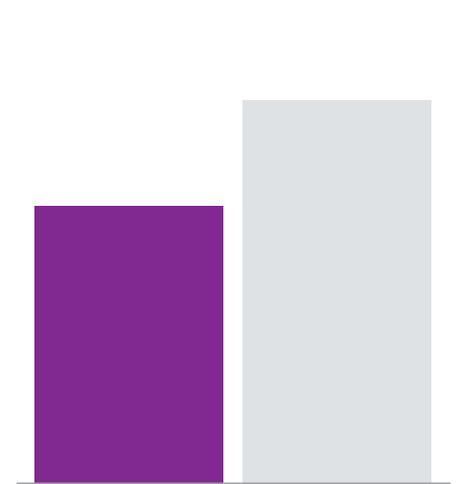


**R46 480** VS SURPLUS

OF **R32 278**

IN 2016/17

FINAL SURPLUS

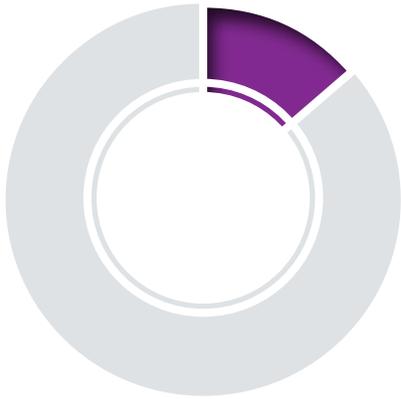


**R46 480** VS APPROVED

BUDGET DEFICIT OF

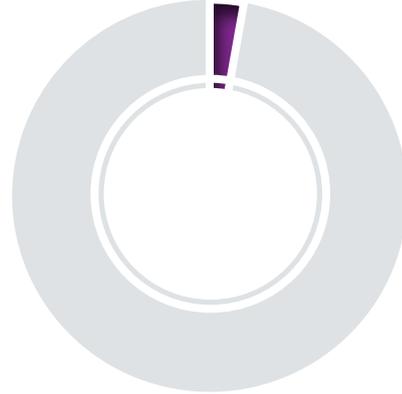
**R63 901**

## SAMRC REMAINS FINANCIALLY STRONG



### ACCUMULATED RESERVES

R289 755 compared to  
R336 236 in 2016/17



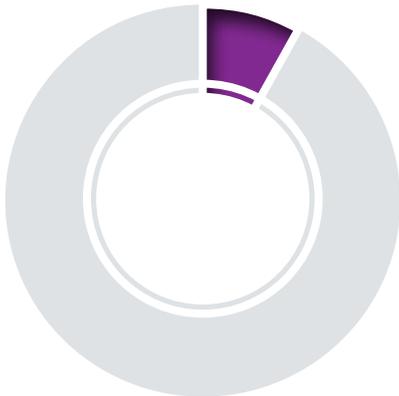
### TOTAL ASSETS

decreased from R752 068 to  
R730 297

PROVISIONS:

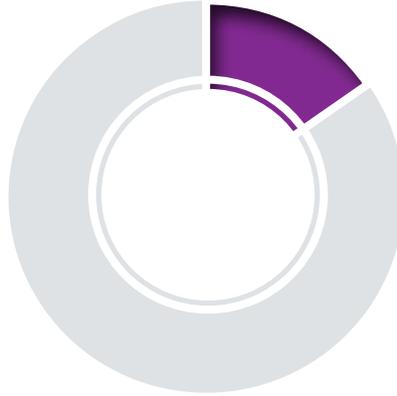
**R4527** performance bonus for 2017/18

## SPENDING TRENDS



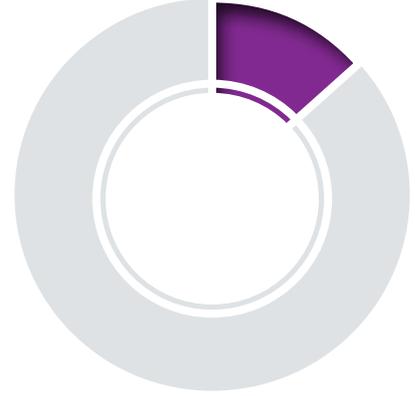
### COLLABORATIVE RESEARCH

increased from R471 121 to  
R513 099



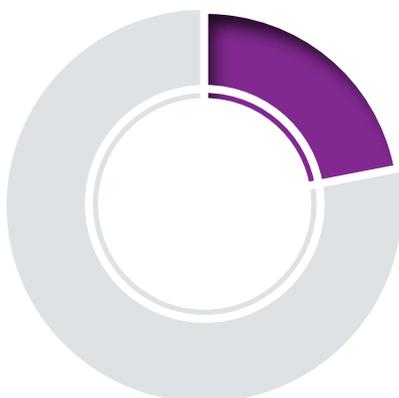
### EMPLOYEE-RELATED COSTS

R303 910 to R359 069



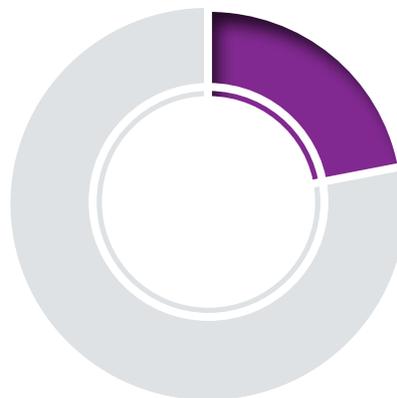
### OPERATING EXPENSES

R948 137 to R1 097 373



### TEMPORARY STAFF COSTS

R13 129 to R16 825



### BASIC SALARY COSTS

R169 830 to R194 736

# REPORT OF THE AUDITOR GENERAL

## for the year ended 31 March 2018

### ACCOUNTING AUTHORITY'S RESPONSIBILITY FOR THE FINANCIAL STATEMENTS

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#### PRESENTATION OF FINANCIAL STATEMENTS IN ACCORDANCE WITH:

- SA Standards of Generally Recognised Accounting Practice (GRAP)
- Public Finance Management Act, 1999 (Act No. 1 of 1999) (PFMA)

### AUDITOR-GENERAL'S RESPONSIBILITY

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#### TO EXPRESS AN OPINION ON FINANCIAL STATEMENTS BASED ON AUDIT:

- Conducted in accordance with International Standards on Auditing
  - Complied with ethical requirements
  - Plan and perform audit to obtain reasonable assurance financial statements free from material misstatements
- 



#### AN AUDIT INVOLVES PROCEDURES TO:

- Obtaining audit evidence about amounts/disclosures in financial statements
  - Ensures that procedures selected depend on the auditor's judgement
  - Evaluate the appropriateness of accounting policies used
  - Ensuring the reasonableness of accounting estimates made by management
  - Evaluate the overall presentation of the financial statements
- 



#### IN MAKING THOSE RISK ASSESSMENTS, THE AUDITOR:

- Considers internal control relevant to the entity's preparation
- Ensures fair presentation of the financial statements
- Designs audit procedures that are appropriate in the circumstances

I BELIEVE THAT THE AUDIT EVIDENCE I HAVE OBTAINED IS SUFFICIENT AND APPROPRIATE TO PROVIDE A BASIS FOR MY AUDIT OPINION.

## OPINION



1. I have audited the financial statements of the South African Medical Research Council set out on pages 145 to 218 of the Annual Report, which comprise the statement of financial position as at 31 March 2018 and the statement of financial performance, statement of changes in net assets, statement of cash flows and statement of comparison of budget and actual amounts for the year then ended, as well as the notes to the financial statements, including a summary of significant accounting policies.
2. In my opinion, the financial statements present fairly, in all material respects, the financial position of the South African Medical Research Council as at 31 March 2018, and its financial performance and cash flows for the year then ended in accordance with the South African Standards of Generally Recognised Accounting Practice (SA Standards of GRAP) and the requirements of the Public Finance Management Act, 1999 (Act No. 1 of 1999) (PFMA).

### EVENTS AFTER REPORTING DATE:

**There were no significant events occurring after the balance sheet date.**



### SUPPLY CHAIN MANAGEMENT

No unsolicited bid proposals received during the year. The existing Materiality Framework was approved by the Minister.



### AUDIT REPORT MATTERS

There were no matters to report.



### ECONOMIC VIABILITY

Funding allocations approved by government :R624 829

**Accumulated reserves: R289 755**

**RESULT:** SAMRC will continue to operate as a going concern.



### EVENTS AFTER THE REPORTING DATE

There were no significant events occurring after balance sheet date.

# COMMUNICATING WITH SOUTH AFRICANS

## MEDIA AND COMMUNICATION

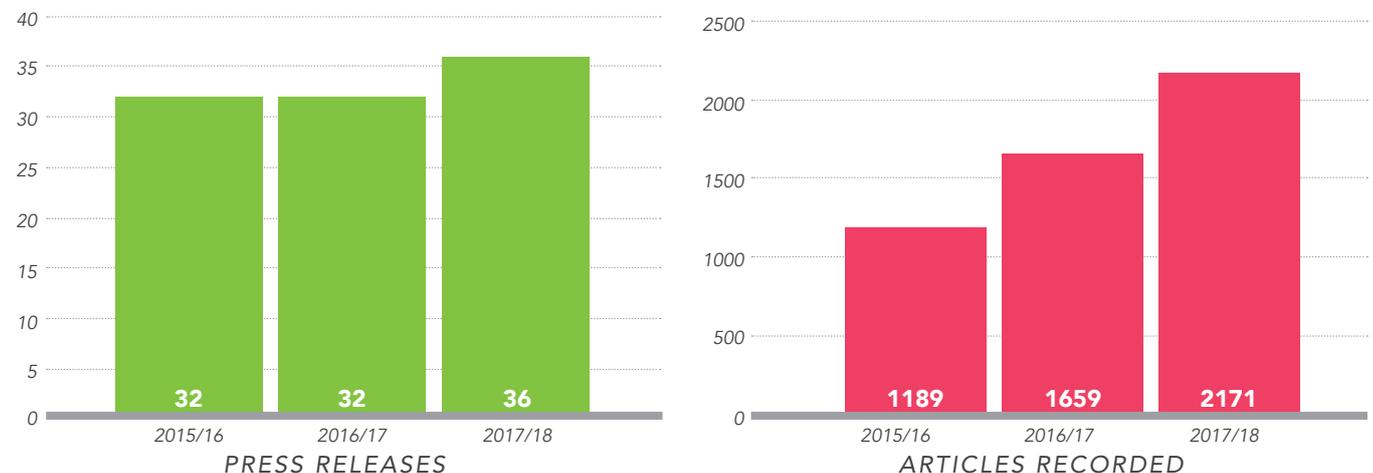
### REVIEW: MEDIA RELATIONS PERFORMANCE

During the 2017/18 reporting period, the SAMRC engaged with different media houses as a means of communicating our research to the public. Our performance in the media space has improved compared to the previous two reporting periods (2015/16 & 2016/17).

**ADVERTISING VALUE EQUIVALENT (AVE)** is the cost of buying the space taken by a particular article, had the article been an advertisement.



#### NUMBER OF PRESS MATERIAL ISSUED & NUMBER OF ARTICLES RECORDED DURING THE REPORTING PERIOD



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