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# Tech | Healthtech, Biotech, DigiHealth Overview

Cape Town and the Western Cape has a dynamic healthtech ecosystem powered by tech-savvy investors and talented people who are driving change and taking advantage of new opportunities. Health innovative solutions are nurtured and thrive in this place of unparalleled beauty, with the lifestyle to match.

As Africa's tech capital, Cape Town and the Western Cape is home to numerous tech start-ups as well as established players. Combined with Cape Town's long history of medical innovation and top academic institutions, this is an ecosystem dedicated to creating value at the new frontiers of the healthtech world.

The Western Cape provides a strong healthtech ecosystem encompassing outstanding universities in the field of biomedicine, biopharming, biomedical engineering, mechanobiology, neuroscience and vibrant healthtech industry, including two globally recognised and research-driven medical schools and associated teaching hospitals.

The Western Cape health technology sector currently contributes an estimated US\$117,73m to the Western Cape economy and creates approximately 2 500 full-time jobs. The Western Cape has spent more than US\$400m on healthcare capital infrastructure in the last 10 years. The province boasts some of the best health outcomes of South Africa's nine provinces.

“The outstanding universities in the area attract outstanding talent from across the country and internationally.”  
– H3D



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South Africa's pharmaceutical and medical device sectors are the largest and most advanced in sub-Saharan Africa. Pharmaceutical and medical device sales have more than doubled in the last 10 years to a value of US\$3,32bn and US\$1,32bn in 2019. South Africa is the primary business hub for the medical device industry in sub-Saharan Africa. A substantial portion of medical device and lab equipment exports are destined for the rest of Africa, with 12 African nations featuring in its top 20 export destinations last year.

South Africa is the only country in the Southern African Development Community (SADC) that meets the World Health Organisation's Good Manufacturing Practice standards. This positions South Africa as a gateway to the Southern African market for manufacturers of pharmaceutical products.

South African-based companies have also been steadily investing in the African continent with manufacturers like Aspen and Adcock Ingram operating in several African countries.

Some of the top companies in the healthtech sector include Biovac Institute, H3D, Roche Diagnostics, Cipla, CapeRay, Aspen Pharmaceuticals, Sinapi Biomedical, TASK and Afriplex. Foreign companies operating in South Africa include Pfizer (United States), GlaxoSmithKline (United Kingdom), Sanofi (France), Bristol Myers Squibb (United States) and Johnson & Johnson (United States).

The Western Cape continues to attract great tech interest, innovation and investment, for example:

- Amazon is now one of the leading investors in Cape Town and employs approximately 4 500 people and has recently begun construction on a series of data centres (the company's first in Africa).
- Naspers: South African born Naspers, headquartered in Cape Town, is now recognised as one of the 10 largest tech investors in the world.

Cape Town is ranked in the top 30 cities at the forefront of global tech, the only city in Africa to make the Top 30, released in February 2019 by Saville Consulting. One of the major advantages of Cape Town is the affordability of real estate for residential rent and co-working costs relative to global high-ranking tech cities. Cape Town is the 6th most affordable city compared with the other 30 top global tech cities.

Access to talented engineers, scientists and clinicians - working at and graduating from the Western Cape's excellent tertiary institutions - drives innovation in health technology in Cape Town.

“Cape Town has a vibrant tertiary institution ecosystem, meaning there is access to enormous talent and projects. It's also a growing tech innovation hub which we can learn from and collaborate with. In addition to being a beautiful city, it has well-functioning infrastructure, without which the sophisticated projects we run, and the services we offer, would be more expensive or not possible at all.” - Centre for Proteomic and Genomic Research (CPGR).



# Why Cape Town and the Western Cape



Cape Town is home to some of the largest cloud and data centres in Africa, including Amazon Web Services, Africa Data Centres powered by Liquid Telecom Group and Teraco Data Environments.



The Western Cape benefits from four world-class universities, two academic hospitals, the South African Medical Research Council as well as the Centre for Proteomic and Genomic Research (CPGR), providing state-of-the-art services to the life science and biotech communities in SA.



There are benefits of agglomeration. The Western Cape has established itself as a key technology hub in South Africa with a number of major companies launching their head offices in the city. This, in turn, is attracting other tech companies.



The Western Cape hosts one of the highest concentrations of medical device and healthcare companies, research institutes and research groups in South Africa. South Africa is the only SADC member country that meets the World Health Organisation's Good Manufacturing Practice standards.



Annually US\$3,89bn is spent in R&D within the South African university sector of which US\$207,76m is spent in the Western Cape. Healthtech R&D accounts for the largest portion of that spend.



Cape Town has more than 25 co-working spaces and more than 20 local and international accelerators.



10% of the world's biodiversity is found in South Africa, and with 9 000 plant species, the Western Cape accounts for most of it. There is significant opportunity for botanical-extract processes for new and specialised products to be developed, as well as for further research.



Manufacturers in the Western Cape have strong support from local government that promotes innovation and exports through an advanced manufacturing and technology strategy implemented through the Council for Scientific and Industrial Research (CSIR).



Cape Town is ideally situated to benefit from the fast growing African market, estimated to reach a population of 2.5 billion by 2050. The Western Cape already exports US\$3.24 billion worth of goods to the rest of continent.



Cape Town International Airport (CPT) is a world-class, award-winning airport, the second largest in South Africa and the third largest in Africa. The port of Cape Town, situated on a major trade route, is one of South Africa's busiest container ports.

# Success Stories:

## Medical Devices pioneered by Stellenbosch University

The Technology Transfer Office of Stellenbosch University, better known as Innovus, has succeeded in establishing many health products and spin-out companies from the university. They are currently responsible for producing the most innovations in South Africa with 20 spin-out companies with a combined turnover of US\$22,68m in 2018 and 300 employees.

## Digihealth based in Woodstock

Situated 3km from the Cape Town Central Business District, this historic area is home to a number of IT innovation and support entities leading to the development of a digital hub. Home to OneBio, the only biotech dedicated venture capital fund and incubator on the African continent. OneBio recently secured US\$5,78m investment for early stage biotech startups.

## Biotech and Pharmaceutical led by the University of Cape Town (UCT)

UCT's Department of Medicine, in the Faculty of Health Sciences, is the largest department in the university and is home to 18 divisions and 10 specialised research units, with worldwide collaborative teams. The microbiology and biotechnology faculties of the university have contributed to the further development of The Centre of Proteomic and Genomic Research. This centre has partnered with global initiatives to lead the way with DNA sequencing in South Africa. The chemistry department has also established a footprint with tropical disease drug discovery and development.



## A Data Centre for Genomics based in Bellville

The African Genomics Centre is a partnership between the South African Medical Research Council and the Beijing Genomics Institute, which aims to build the capacity for whole human genome sequencing. The potential impact of better understanding the factors of diseases specific to South Africa, and developing informed strategies, are a vital asset. Two entities driving further development in genetic knowledge with a focus on the African population is Artisan Biomed and Gknomix.



## Cape Peninsula University of Technology (CPUT) and University of Western Cape (UWC)

The CPUT Applied Sciences Faculty is leading the way with indigenous medicine research in the region. Developments in nanotechnology, food supplements and nutraceuticals such as omega 3/fatty acid and a rooibos extract capsule are exciting contributors globally. UWC's faculty of natural sciences is an important centre of research in SA with a spin-out company now marrying information with digital sequencing to get faster identification of treatment resistance in TB and HIV patients.

Stellenbosch University is currently establishing a billion-rand state-of-the-art Biomedical Research Institute at its Faculty of Medicine and Health Sciences. It aims to investigate diseases with the greatest impact in South Africa and Africa, and to improve diagnosis, prevention and treatment of illnesses such as tuberculosis, HIV, diabetes and heart disease, among others.



# Indigenous Medicine

This area of study is fuelled by the Western Cape's unique Cape Floral Kingdom which has over 9000 plant species endemic to the area. Rooibos, honeybush and Buchu are some of the most known products from this region. Botanical extracts processes are continuously being explored for new and specialised products to be developed from these nutrient-rich, raw materials. The diversity of the plants available coupled with indigenous knowledge, offer great opportunities for further research and product development. The South African Herbal Science & Medicine Institute at the University of the Western Cape strives to be a world-class research institution, focussed on scientifically and clinically unlocking the value of traditional medicines in the service of humanity.

# Medicinal Cannabis

The Western Cape has a fast developing quality-assured medicinal cannabis industry.

South Africa introduced a licencing framework for the cultivation and manufacture of medicinal cannabis in 2017, and in 2018 the Constitutional Court decriminalized the private use and cultivation of cannabis.

This medicinal cannabis framework provides an opportunity to link agricultural production to the pharmaceutical value chain.



# Incentives

## **Support Programme for Industrial Innovation (SPII):**

This is a financial incentive administered by the dtic. It is designed to promote technology development in South Africa's industry, through the provision of financial assistance for the development of innovative products and/or processes. SPII is focussed specifically on the development phase, which begins at the conclusion of basic research and ends at the point when a pre-production prototype has been produced. The incentive consists to two main components: The Product Process Development (PPD) Scheme and The Matching Scheme.

## **Section 12J: Venture Capital Incentive**

Investment into a Section 12J Venture Capital Company (VCC) is fully tax deductible. National Government implemented a tax incentive for investment in small and medium-sized businesses through a venture capital company regime to assist SMEs with access to private equity finance.

## **Black Industrialist Scheme (BIS)**

Designed to promote industrialisation, sustainable economic growth and transformation through the support of black-owned entities in the manufacturing sector.

## **Research and Development (R&D)**

This is a tax allowance incentive administered by the Department of Science and Innovation and South African Revenue Service (SARS). The R&D Tax incentive applies to both Special Economic Zone (SEZ) based and non-SEZ based businesses. Provides 150% tax allowance deduction when determining an applicant's taxable income prone to operational R&D expenditure (overheads, raw material and labour) incurred by companies registered in South Africa, undertaking R&D.

# Industry Support

## SA SME Fund

The SA SME Fund invests in funds that support and develop entrepreneurs. The fund was established by members of the CEO Initiative – a collaboration between government, labour force and business to address some of the most pressing challenges to the country's economic growth – as an avenue of support for the SME sector.

## Technology Innovation Agency Funding Instruments

### 1. Seed Fund

The fund's purpose is to enable innovators to evaluate, demonstrate and advance the value proposition and commercial potential of their research outputs. The fund therefore contributes towards derisking research outputs in order to increase the pipeline for TIA and other funders.

### 2. Technology Development Fund

The Technology Development Fund provides funding to advance technologies from proof of concept to technology demonstration.

### 3. Pre-Commercialisation Fund

The Pre-Commercialisation Support Fund assists existing or potential individual entrepreneurs and Small Micro Medium Enterprises to obtain funding to support pre-commercialisation activities including the development of production / service capacity to levels that will support operational sustainability. This further includes market testing and validation of the technology in the potential customer environment, as well as bridging finance in preparation for commercialisation.

# Key Sector Enablers

