

AWARDS, HONOURS AND ACHIEVEMENTS

- Recognition as the best Director-General, Department of Science and Technology, now the Department of Science and Innovation (DSI) (2006 to date)
- Chair of the Group on Earth Observation (until 2017)
- Board member of Square Kilometre Array (SKA) leading the technical team that submitted the bid for the African countries to the International bid committee

DEFINING MOMENT

During his time as a lecturer and early researcher at the University of South Africa (Unisa), Phil Mjwara met Dr Rob Adam who encouraged him to spend some time at the Department of Science and Technology to work on science policy. Since then, he has been involved in making policies geared toward helping researchers and the broader South African community.

WHAT PEOPLE MIGHT NOT KNOW

"I am a failed musician, but I have a great love of music. I tried the trumpet, I tried guitar, tried piano, but never quite got good enough at any of them."

MAKING GOOD USE OF SCIENCE FOR SOUTH AFRICA

"I have come to realise that we can spend a lot of time researching and contributing to science, but we can also spend that time well in creating an environment to benefit researchers." Phil Mjwara likes to use the word 'we' when he talks about his many achievements and the numerous projects he has been involved in. His humility is surpassed only by his great love of science, which started at a very young age.

He grew up in the township of Lamontville, KwaZulu-Natal, fascinated by all things mechanical, especially cars and buses. Now serving as the Director-General of DSI, it is hard to imagine the journey he took to get there. "It is always difficult to sense exactly when I started to love science," he says. "I remember I was about 14 when I learned about a mechanic neighbour who lived downstairs." Seeing the vehicles opened up and taken apart awoke his curiosity and he wanted to know more about how these machines, and the universe, worked.

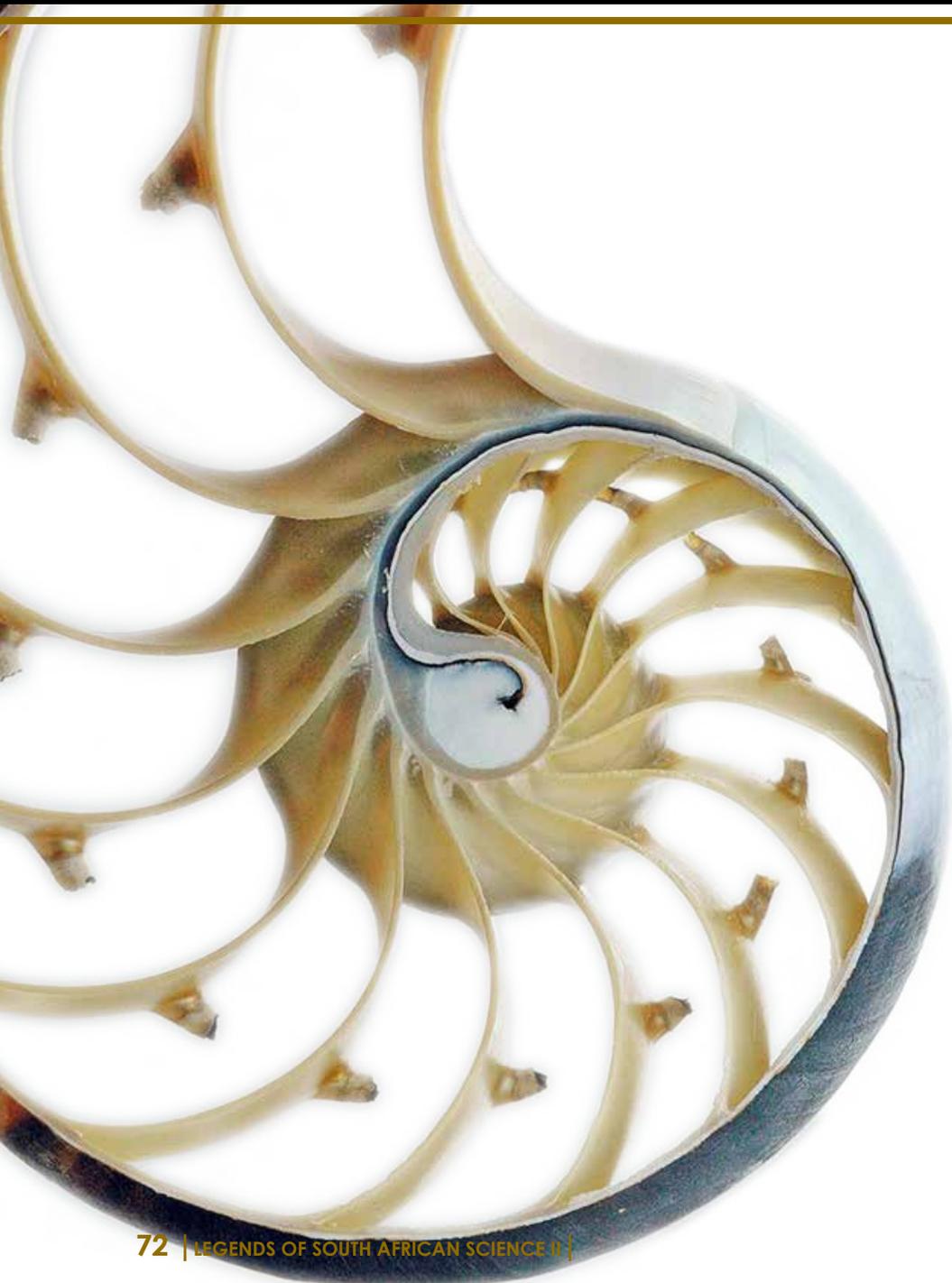
At high school he had a great affinity for mathematics and science and initially he thought he would become a medical doctor. "I tried to follow the biological subjects, but they didn't work out for me," he laughs. Finishing high school in 1976, he worked at a Shell and BP petroleum refinery in Durban and there he was offered the opportunity to train as an engineer in a chemical, mechanical or electrical specialisation. "They wanted to train us as black engineers; we underwent a course they were offering and my love of science grew even more," Mjwara says. So in 1979 he enrolled at the University of Fort Hare (UFH) in the Eastern Cape, one of the only universities to offer engineering courses to black students during apartheid.

There he did a pre-engineering programme, but he fell in love with physics in his second year which led to him getting a degree in physics instead of the engineering qualification. After completing the BSc, he worked as a senior laboratory assistant at UFH for two years and completed an honours degree in 1984. He became a junior lecturer and then moved to the University of the Witwatersrand (Wits), where he obtained his PhD in 1987 and was then appointed to lecture at the Unisa in 1992. While at Unisa, Mjwara got a taste for science policy that would go on to define the rest of his life and career. "Strangely enough, in life there is always somebody who brings out an expertise in you that you were not aware of," says Mjwara, describing how he met Dr Rob Adam at Unisa, who would later become the Director-General of the then Department of Science and Technology (DST). "At the time I had just started my research career at Unisa, having worked there for two years."

DISCOVERING SCIENCE POLICY

Adam had just started working on science policy in the early days of the DST after 1994 and was looking for good people to work with him. "We had worked together at Unisa, and he asked if I would be keen to be seconded to the department," says Mjwara. The secondment was initially supposed to be for two years, after which he would continue with his research at Unisa, but it stretched into four. "I thought that this was good work for me because while it drew on a scientific capability, I was also working on the broader policy that impacted the very science I wanted to do," he says. "This was yet another point where my love of science grew."





Having had a background in laser physics he applied for the post of director of the National Laser Centre at the Council for Scientific and Industrial Research (CSIR) and got the job in the early 2000s. "I spent four years running the laser centre and I developed a great passion for managing people and managing institutions," he explains. His next promotion was becoming Group Executive responsible for research and development at the CSIR in 2005. "I enjoyed the experience very much because it was a combination of understanding policy, understanding science and being in management."

On advice of the then Minister of DST, Mosibudi Mangena, Mjwara applied for the position of Director-General and was appointed in 2006; he has remained to this day. When he started, he found himself in a department trying to change the priorities of science and technology to fit the needs of the country better. "We had started to worry that while the department had a strong focus on South Africa's ability to do science, we were not strong in our ability to develop technology and identify solutions that the country needed."

Building on work of talented predecessors like Rob Adam, Mjwara established a technology policy portfolio without forgetting the importance of scientific research in general. "I spent a lot of time thinking about how we could strengthen the work that had already been done." When Cabinet adopted the *National Research and Development strategy of 2002*, Mjwara felt that it was not strong enough on technology development and its potential to grow the economy. "We introduced *The Ten-Year Innovation Plan* which placed an even greater emphasis on innovation. This plan proposed setting up the Technology Innovation Agency (TIA) which would accelerate the translation of ideas into products and services. We looked at how other programmes at the DST could be shaped differently to make better use of science, technology and innovation to change people's lives."

Mjwara has been pushing for what he calls advocacy work at the department, where he has been trying to make sure the work they have done for the past 12 years is used to improve the lives of all South Africans. Throughout his career, Mjwara has worked to ensure that good science is done in South Africa, and that the benefits of that science are applied for the benefit of the country and its researchers. "Those are the motivations that moved me into the science and innovation policy space."

"I would like to applaud and express my appreciation of all the people I have worked with," Mjwara says. "I have been very lucky to be a Director-General for so long, and it is thanks to everyone I work with that I have been able to stay for so many years."

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Academy of Science of South Africa (ASSAf)

Academy of Science of South Africa (ASSAf)

Academy of Science of South Africa (ASSAf), (2019). Legends of South African Science II.

[Online] Available at: DOI <http://dx.doi.org/10.17159/assaf.2018/0036>

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