

## Studying their way to the top

The department's bursary and internship programmes are transforming the lives of grateful graduates

By **Salome Tsoka, Tshogofatso Ndhlovu & Veronica Mahlaba**

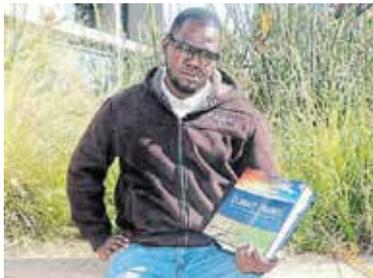
Every year, hundreds of academically deserving and previously disadvantaged young South Africans are given bursaries through the department of forestry, fisheries & the environment bursary and internship programmes.

The bursary and internship initiative offers bursary funding of up to R40,000 a year for each recipient to pursue full-time studies in various environment-related fields.

On completion of their studies, the department offers the bursary recipients practical training for up to two years. The initiative is one of the ways the department tries to bridge the gap between academic study and competent performance in the workplace. It has awarded 380 bursaries since 2010.

Let's hear about the journey from some bursary recipients:

• **Timothy Nthite** completed



**Paulus Seodisa is working towards his masters and PhD to be a professional scientist.**  
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his national diploma in analytical chemistry from Tshwane University of Technology and started his internship with the department in 2021.

"I have learnt the government is responsible for a lot of work which many citizens are not aware of. As an official in the department, I have drafted a licence for Hendrina power station and have also been responsible as a case officer on the waste management licence review for the Interwaste Maluti waste management facilities," says Nthite.

"This internship programme has helped me understand the interaction between the private sector and the government. We are not only authorising waste management activities at various waste management facilities around the country, but we are also making a difference."

Over the next five years, Nthite says he would like to

help educate people in his community about proper waste management processes.

• **Paulus Seodisa** studied a BSc in zoology and human physiology at the University of Johannesburg, finishing in 2019. He is based in the local government support unit at the department of forestry, fisheries & the environment.

Seodisa supports the review of environmental municipal profiles by consolidating municipal data, stakeholder consultation reports and geographic information system (GIS) mapping for environmental profiles.

Seodisa wants to be a qualified control environmental officer, and is working towards his masters and PhD to be a professional scientist.

• Born in Ga-Molepo, Limpopo, **Florence Sebati** holds a BSc (Hons) in environmental



**Nape Mathapo says being a bursar has helped her gain more knowledge in her field and develop both professional and soft skills.**  
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management from Unisa. A beneficiary of the department's bursary programme, Sebati is an intern in the chemicals and waste management branch where her duties include the processing of waste management applications and integrated environmental authorisations.

She says receiving the bursary came to her rescue. "I was in debt with the university at that time. The bursary came at exactly the right moment and it brought a huge relief to my life as I was relying on contractual work to cover my fees and that was not enough."

Sebati says she dreams of holding a position in the department as a control environmental officer. She's encouraging young people to study careers in the environment sector as it is broad and comes with a lot of opportunities.

• **Nape Mathapo** completed her BSc in environmental and resource studies from the University of Limpopo in 2019. She is now working in the department's sustainability pro-

gramme and project as an intern. Mathapo says being a bursar has allowed her to be a part of the department's internship programme, which has helped her gain more knowledge in her field and develop both professional and soft skills.

"I have learned that being knowledgeable about the job is the key for success within the department. In addition, opportunities for skills development will be presented, and one must be willing and eager to take them up," she says.

Mathapo provides technical and administrative support for the co-ordination of green research, development and policy interventions as well as the implementation of the catalytic green economy sector programme. She sees herself as a control environmental officer in future, where she will fully exercise her skills and be permanently employed. She also hopes to complete her second master's degree soon.

■ Editorial supplied by the department of forestry, fisheries & the environment.

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# On a cleanup mission

Multimillion-rand waste fleet to wrestle with municipal litter

Through its waste management fleet handover campaign, the department of forestry, fisheries & the environment has taken the fight against litter to the road.

The department has spent R42.4m to provide 22 vehicles to 19 municipalities which are battling unsightly litter across the country. The vehicles include skip loader trucks, front-end loaders, compactor trucks and other trucks required to transport waste within the municipal area.

“Our municipalities are struggling to provide regular and consistent waste collection services. Once dumpsites developed, these are not regularly cleared and a number of our landfills do not meet regulatory compliance standards,” says forestry, fisheries & the environment minister Barbara Creecy.

“To improve waste management in municipalities, the department is assisting in the development of their integrated waste management plans, and training on sustainable waste management practices.”

Among the greatest threats to the health of the environment and people is waste pollution. “We are plagued by lit-

**Department of forestry, fisheries & environment minister Barbara Creecy hands over a waste collection truck to Merafong and West Rand local municipalities. / SUPPLIED**



tering, illegal dumpsites and the scourge of plastic waste that enters our river systems, our wetlands and ultimately our oceans,” she says.

While the country has made significant strides in improving waste management since 1994, almost a third of households still do not have regular weekly household waste removal services. Households are forced to find their own solutions, which can be damaging to the wellbeing of communities and the environment.

The national waste management strategy was revised in

**“Communities must separate their waste at home”**

2020 and focuses on:

- Improving household waste collection;
- Diverting waste from landfills; and
- Promoting a circular economy and awareness of the effects of illegal dumping on health and the environment.

“All of us must play our part. National and provincial government must support municipalities to develop local integrated waste management strategies. We must ensure our landfills comply with the regulatory environment and waste does not leach into groundwa-

ter or into the soil. We must invest in the yellow fleet and ensure that every year more homes have access to safe waste disposal,” says Creecy.

The government has set up the regulatory environment for extended producer responsibility schemes to promote recycling in the packaging, electronics and lighting industries, with recent regulations gazetted for new sectors such as used oil and pesticides.

Regulations for organic waste treatment and composting have also been published for implementation to divert waste from landfills and create new industries.

Promoting the circular economy gives a decent livelihood to the tens of thousands of men and women who do the daily back-breaking work of the recycling industry, says Creecy.

“Communities must separate their waste at home so waste reclaimers can undertake their work in a dignified manner. Households must teach family members not to litter and work with their neighbours to prevent illegal dumpsites. All of us must participate in regular cleanup campaigns,” she says.

The municipal infrastructure grant policy has been changed so municipalities can access the grant to fund their yellow fleet.

# Bringing together people and oceans

Marine biologist Kerry Sink on her charge to save our seas

Award-winning marine biologist Prof Kerry Sink is a principal scientist and the marine programme manager at the SA National Biodiversity Institute as well as an associate of Nelson Mandela University.

She leads the classification, mapping and assessment of marine ecosystems and led the technical team for the Operation Phakisa Oceans Economy initiative that implemented 20 new marine protected areas (MPAs) in SA in 2019.

Sink received a Pew Fellowship in 2016 and a Distinguished Service Award from the Society for Conservation Biology in 2018. She is on the Consultative Advisory Forum of the Marine Living Resources Act for the environment, forestry & fisheries minister.

**Q: What inspired you to become a marine biologist?**

**A:** I was inspired by the scientists working at the Oceanographic Research Institute in Durban. The aquarium drew me in and then, when I started working there, I was exposed to the women and men doing

interesting research with purpose. All the work was geared towards better management of fisheries resources and the ocean.

**Q: To what extent can technology solve our environmental challenges?**

**A:** Technology has an important role to play, particularly with regard to the energy crisis, climate change, pollution reduction, environmental management and conservation communication. However, without excellent relationships between people within and between institutions, departments and communities and a shared vision, different technologies may work against each other. We must harness technology for the common good.

**Q: What do you think an ordinary person can do to help the environment?**

**A:** There are so many things people can do to help nature while helping themselves. We can reduce our energy consumption, support wild

places, choose our food, packaging and home products with care, and give some of our energy for common good. Growing food, walking, riding a bike and joining a coastal cleanup are great ways to help the environment.

In our house, if someone leaves a light on in the day, you will hear: “Who is causing coral bleaching?” and I’m the slowest shopper, carefully considering my choices. We need innovative solutions and fresh thinking to solve environmental problems so even in a work context, there are many other fields that can make a significant contribution to mitigating environmental challenges.

**Q: What are some of the environmental projects you have taken up?**

**A:** The project closest to my heart was the Offshore MPA project, though my first conservation project was the development of the Southern African Sustainable Seafood Initiative. The Offshore MPA project involved the establishment of 20 new areas



Marine biologist Prof Kerry Sink. / PETER CHADWICK, AFRICAN CONSERVATION

in SA and ran from 2006 to 2019. I am still working to increase marine ecosystem protection levels in the country, and my favourite work involves offshore exploration using remotely operated vehicles.

I have led three projects funded through the African Coelacanth Ecosystem project. Deep Secrets expedition undertook a 1,600km cruise from Robben Island to Kei Mouth and discovered new features and species under the sea. The Deep Forests project is advancing knowledge, mapping and management of animal forests such as deepwater coral reefs, fields of sea pens (soft corals adapted to living in sand), and fragile lace coral and sea fan gardens.

My most recent project, Deep Connections, is linked to an international project — the One Ocean Hub — and is a trans-disciplinary project that brings together social science and art-based approaches, oceanography, genetic and ecosystems research to improve sea spatial management. We are currently working on mapping culturally significant areas in the coastal and marine environment.

**Q: In one statement, what message do you have to the coming generation?**

**A:** We only have one planet: work together, cooperatively — for the common good.

# Let's give the lungs of our planet love and protection

Our trees and forests are a vital defence against climate change: we need to protect them



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Historically, SA did not have a culture of tree planting, and it was only in the 1970s that the need to promote tree planting was recognised. The concept of National Arbor Day ensued from the 1973 Green Heritage Campaign.

It has since graduated to Arbor Month, a national campaign initiated to celebrate SA's trees and raise awareness

about their importance.

## How can you help protect our indigenous forests?

Our forests are under threat from people who are careless with our heritage. Never cut down a tree in a natural forest and/or remove an animal or living plant without permis-

sion. Explain to others the importance of protecting our natural places.

## Why must we plant trees?

Many places in SA are barren and lifeless because they don't have trees, gardens or plants. In the past, trees were not planted in township areas

while suburbs have usually had trees growing for many years. We need to plant trees in every town, city and school in the country. We need to plant a tree with every new home. We need to ensure that every clinic has trees.

You can help by planting trees at home or working with your school, church or local government to plant trees. Integrating fruit trees in your food garden can address household food security. We are a water-scarce country so use methods that conserve water to irrigate your trees.

## What is the Champion Trees Project?

The Champion Trees Project was launched in 1998 to identify and protect trees that are of national importance and worthy of special protection, due to their remarkable size, age, aesthetic, cultural, historic or tourism value. Similar projects have been established in other countries, but this is the first of its kind in Africa.

Nomination forms with guidelines for the nomination process are available from the department of forestry, fisheries & the environment. The nomination cycle starts on August 1 every year and ends on July 31 the following year. The oldest planted tree in SA is a Saffron Pear tree, brought from the Netherlands and planted in the Dutch East India Company gardens in Cape Town more than three centuries ago.

## What is the link between trees and climate change?

It is well known that the global climate is changing and that it is likely to continue changing for many years to come. Climate change brings about unusual weather, droughts and floods, melting of the permanent ice of the North and South Poles, as well as rising ocean levels. All this is the result of air pollution caused by human activities.

One of the main pollutants responsible for this phenomenon is the greenhouse gas, carbon dioxide. Greenhouse gases have the ability to trap the sun's heat in the atmosphere, preventing the Earth

from cooling down. Green plants are a vital defence against climate change because they have the natural ability to remove carbon dioxide from the atmosphere and store the carbon as biomass. Trees are especially valuable because they produce wood, in which a large quantities of carbon is locked up for years.

To put this into perspective: one hectare of forest growing at the rate of producing 10m<sup>3</sup> of wood a year will be removing carbon to the equivalent of 14-million cubic metres of air. One can visualise this as a column of air 1.4km deep over an area of forest the size of two soccer fields.

Keep in mind that trees do not all grow equally fast, and all forests are not equally productive because carbon sinks. Trees in urban environments and commercial forestry plantations generally grow quite fast and are therefore active carbon sinks. Under favourable conditions, some plantations can achieve average annual growth rates of 20m<sup>3</sup> per hectare.

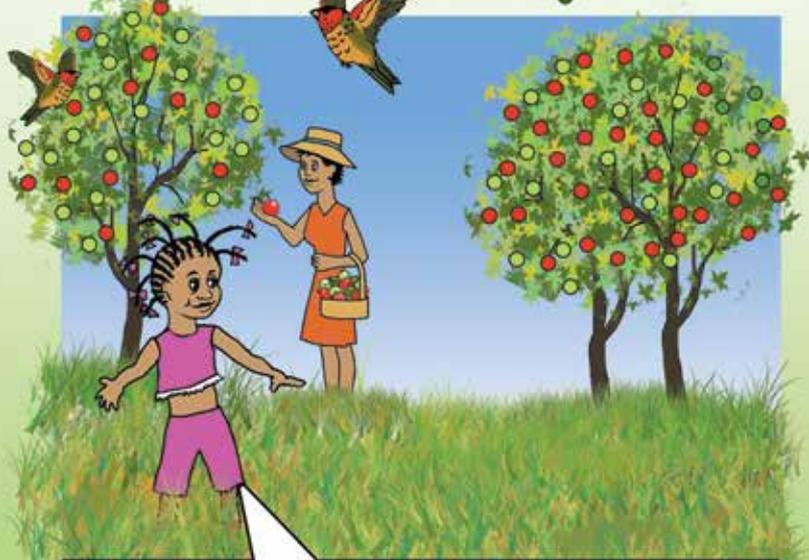
**Forestry's economic contribution is estimated at R45.5bn**

## Forests and the economy

According to Forestry SA, forestry is estimated to contribute about 150,000 jobs, predominantly in rural areas where there are high levels of unemployment. The contribution to the economy is estimated at R45.5bn, which translates into 7.7% of manufacturing GDP and 25.5% of agricultural GDP, including pulp and paper.

It is through commercial plantations that timber is produced for construction, mining, furniture, paper production and other beneficial timber-related enterprises.

## Why are trees important?



### Trees are important because:

- They supply oxygen that we breathe and they take in carbon dioxide which we do not need;
- They provide shade for humans, houses, animals, birds, and smaller trees or shrubs;
- They provide food for domestic animals (goats, cows, donkeys) and wild animals (giraffes, Impalas, elephants, etc). Humans also eat fruits from the trees;
- Trees are used for firewood which is used for cooking and heating in winter;
- Many indigenous trees are used as medicine to cure diseases;
- They protect the soil from erosion and shelter our houses from the wind;
- They provide timber for furniture, houses, paper, fences and tools;
- They are used to produce ornaments (craft and sculptures).

# Climate warming fight heats up

No time to waste as life as we know it begins to change irrevocably

As we all know and hear about constantly, climate change is a threat to humanity's wellbeing and the health of our planet. Any further delay in concerted global action will miss the brief, rapidly closing window to secure a liveable future. Now, more than ever, we need to gear up and take a firm stand against climate change.

Though it might be a global phenomenon, the impact is experienced locally where people's lives and livelihoods are directly affected.

Communities around the Western Cape and KwaZulu-Natal have, in recent months, experienced its destructive force first-hand with floods and severe storms, bringing home to all of us that climate change-related disasters are now part of our daily lives. Now is not the time to turn a blind eye to this issue.

SA's long-term adaptation scenarios and the fifth and sixth assessment reports of the Intergovernmental Panel on Climate Change suggest that by 2100, warming is projected to reach an average increase of between 3°C and 4°C along the coast — and between 6°C and 7°C in the interior.

With such temperature increases, life as we know it will change completely: the western part of the country will be much drier and increased evaporation will ensure a decrease in water availability. The eastern part of the coun-



try will experience increased rainfall with more storms and other severe weather events.

Coastal communities will be at risk from storm surges and rising sea levels.

Climate change poses the single most serious threat to Africa's development and prosperity. As a cross-sectoral challenge, steps need to be taken by all levels of government



Warming in SA is projected to reach an average increase of between 3°C and 4°C along the coast — and between 6°C and 7°C in the interior. / SUPPLIED

**Climate change poses the single most serious threat to Africa's development and prosperity.**  
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**Climate disasters are now part of our daily lives**

— and society — to address the effects of climate change and ensure we are able to adapt to our new climate reality.

Some of the steps that the government has taken in the fight against climate change include:

- The National Climate Change Adaptation Strategy, which was approved by cabinet in 2020 and sets out na-

tional priorities for building climate resilience to provide guidance to the government, society and the economy.

The objectives of this strategy include building climate resilience and adaptive capacity to respond to climate change risk and vulnerability; promoting the integration of climate change adaptation responses into development objectives; improving understanding of climate change effects and capacity to respond to them; and ensuring that resources and systems are in place to enable implementation of climate change responses, including early warning system technology and infrastructure.

- The adoption of the Climate Change Bill which, once passed by parliament, will make it mandatory for all levels of government to develop and implement climate response strategies.

- The Presidential Climate Commission, which seeks to develop a common framework for a just transition to a low-carbon and climate-resilient society that leaves no-one behind.

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