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By **Veronica Mahlaba**

To celebrate World Environment Day, the Minister of Environment, Forestry and Fisheries, Ms Barbara Creecy along with the Deputy Minister, Ms Maggie Soty and the Gauteng MEC for Economic Development, Agriculture and Environment Dr Kgosientso Ramokgopa lead a Good Green Deeds clean up Nellmapius in Mamelodi East on of June 2019.

The community clean-up was aimed at raising awareness about waste management and the significance of a clean and safe environment to the health of all South Africans as part of the Good Green Deeds Programme launched by President Cyril Ramaphosa in March 2019.

Nellmapius is affected by a widespread of illegal dumping that impacts negatively on resident's daily lives. While the proportion of households with access to formal waste removal has grown to 80% compared to 55% in 2001. Waste removal remains a challenge in many urban areas. Only 66% of households have refuse removal at least once per week. The consequence is that many households resort to informal waste disposal.

The Minister said that she and the Deputy Minister are extremely happy that people have chosen to support them on their very first public activity in their new role. She further explained that World Environment Day is a very important day when we have to recommit ourselves to saving our planet and to improving the quality of life of all people in our communities.

"What we understand across the world is that poor environmental management affects people living in poor and working class communities the most. Here in South Africa our situation is no exception to that world trend, because of the history that we come from. Black communi-

Minister Creecy leads World Environment Day



Minister of Environment, Forestry and Fisheries Ms Barbara Creecy and Deputy Minister Maggie Soty spread the message of reducing waste that causes air pollution on World Environment Day.

ties and communities where people live in poverty carry a disproportionate burden of the effects of poor environmental management. We find that in many com-

munities, particularly informal settlements we don't see a situation where waste removal is each and every week. The consequence of that is people are forced to use



Gauteng MEC for Economic Development, Agriculture and Environment Dr Kgosientso Ramokgopa; Deputy Minister, Ms Maggie Soty and Minister of Environment, Forestry and Fisheries, Ms Barbara Creecy addressing the Nellmapius community about the importance of World Environment Day.

informal systems of waste removal, which is dumping," said Minister Creecy.

She further stated that the WED is about creating awareness of our National Waste Management Strategy. It's about creating awareness that it is important that we clean up the environment because it has an enormous impact on the health of communities, our natural resources, waterways and so on. This was also an opportunity for people to start understanding that waste can also be viewed as an income generating commodity.

"The Department of Environment, Forestry and Fisheries as the custodian of the National Waste Management Strategy has extensive programmes to recycle waste, including glass, plastic, paper, sludge, and ash and so forth. Those programmes are all about developing the value

chains, supporting the emergence of small and micro enterprises and corporate and of course most importantly about finding ways to use this area to create jobs," Minister Creecy explained.

The MEC for Economic Development, Agriculture and Environment Dr Kgosientso Ramokgopa stated that government they need to mobilise communities and ensure that they engender some sort of responsibility that the primary responsibility of getting areas clean does not reside with the government but it is the responsibility of communities.

"We need to ensure that there is cooperation between the three spheres of government to ensure that our interventions are impactful and meaningful. I am glad that all three spheres are here and there must be frequency and reliability of collection of domestic waste."

What is Air Pollution?

About 7-million people worldwide die prematurely each year from air pollution.

World Environment Day 2019 will urge governments, industry, communities, and individuals to come together to explore renewable energy and green technologies, and improve air quality in cities and regions.

The air we breathe affects the quality of our lives and our health. Like the weather, the quality of air can change from day to day or even hour to hour. The government is required by the constitution to ensure that all citizens are breathing air that is not harmful to their health and wellbeing.

For this reason, all spheres of government – national departments, provinces, municipalities – should monitor the state of air quality in order to record the levels of pollution and inform the public. There are over 130 fully automated air quality monitoring stations across the country.

These ambient air quality monitoring stations are called stations hereon.

The stations provide valuable information regarding the state of ambient air quality that citizens are exposed to.

The stations also provide information to assess how the country's pollution level compares with legal requirements and to assess the impact of interventions that are put in place to reduce air pollution.

What are the effects of air pollution?

Ozone depletion and global warming.

What is the government doing to address air pollution?

The National Environmental Management: Air quality Act is important as it helps the government to:

- Regulate and manage air pollution in the country.
- Monitor the pollutants to ensure that air quality is improved.
- Enhance the quality of ambient air in order to secure



an environment that is not harmful to the health and wellbeing of people.

Information from the monitoring stations is transmitted to the South African Air Quality Information System (SAAQIS), a partnership between the Department of Environment, Forestry and Fisheries and the South African Weather Service.

This information is collected in real time, every five minutes and is made available through the SAAQIS website

<https://saaqis.environment.gov.za> and an innovative mobile application tool called SAAQIS.

The AQI is a simplified tool for reporting air quality to the general public. The AQI tells you how clean or unhealthy your air is, and what associated health effects might be a concern.

In addition to man-made sources, large quantities of air pollutants are also released from natural sources. These sources include:

- Veld fires, biological sources, wind erosion, volcanic eruptions.

What are the sources of air pollution?

- Industrial plants
- Power stations
- Mining
- Traffic
- Exhaust fumes
- Agricultural activities
- Household cooking
- Refuse burning

Other sources include chemical sprays; household products such as tobacco fumes from paint, hairspray, varnish, aerosol sprays; and many cleaning products we use in our homes.

Join the conservation on Twitter #beatairpollution #goodgreendeeds
Other sources: UNEP

A look at SA's state of air quality in winter

By **Salome Tsoka**

Department of Environment, Forestry and Fisheries chief director: air quality management, Dr Thuli Khumalo, highlights how the state of South Africa's air quality is worse in winter and has called on all South Africans to take the responsibility.

What's the state of air quality in winter?

The state of air quality in South Africa during winter is our worst time in terms of emission sources and the climatic conditions that trap the air pollution. There are two things that happen during winter.

First, temperature drops and people have an increased need to keep warm. They want to burn coal to keep warm and keep the heat going. Second, there is a natural phenomenon which we call the inversion layer. The inversion layer happens when the earth's surface cools down faster than the upper atmosphere, as such there's no more mixing



Department of Environment, Forestry and Fisheries chief director: air quality management, Dr Thuli Khumalo.

of air parcels.

So, the air pollution is just trapped there. That is why the monitoring stations will measure high levels of air pollution during winter.

Should SA be moving towards renewable power sources?

I believe we should be mov-

ing towards renewable energy. We have the resources for it, we have sun and wind and we can generate electricity using those. We have legislation for a just transition to a lower carbon future.

We've got pollution implementation plans that commit industries to produce less going forward. However, the solution

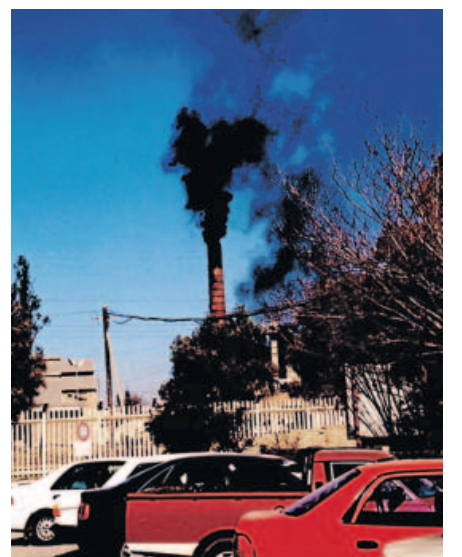
doesn't rely on industry only. We need to change our behaviour and be conscious of our activities that are adding to the problem.

Is the department running any awareness campaigns with this regard?

There's a role that awareness can play especially when people have choices and options. During this year's Environment Day, we want to have an event on air pollution and share with the public in terms of behavioural change that people can do. We want to make people aware of their individual contributions

How can people access information on the state of air quality in the country?

The department has developed the South African air quality information system (SAAQIS) app which is available for Android and Apple devices. Information found on the app, as well as new regulations regarding air quality, are also available on the SAAQIS website. The app gives you live readings of the state of air as it is measured in the monitoring stations.



Gender and the Ocean

Opportunities to follow a career in the oceans space are too many

By **Benedict Mlaba**

This year SA joins the world again in celebrating World Oceans Day on June 8.

The global theme this year is Gender and the Ocean, however, SA has adopted the theme Women and the Ocean to put a spotlight on the various career opportunities available for women to be a part of the oceans space.

In an effort to highlight just one of many such careers, we

conversed with female estuary ecologist, Jabulile Nhleko, from the department's branch, oceans research, about her career, to get an idea of what it involves, why one should be interested, and how can one pursue a similar career path.

"Estuaries are a link between freshwater and marine. Its biota [plants and animal life of a region] is made up of biota from both environments and therefore skills learnt in estuaries could be used in both."

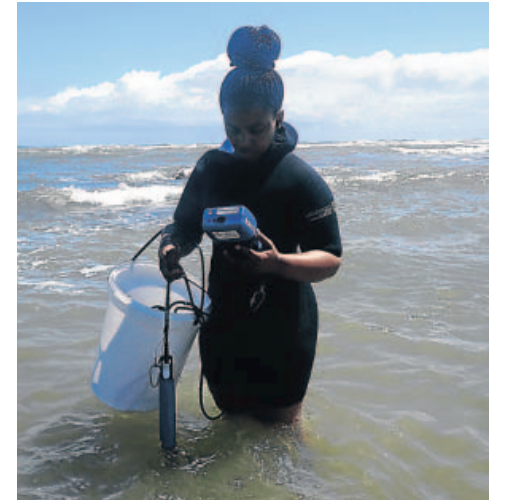
Nhleko, who has been working in the department for five years after having joined in May 2014, explained the requirements needed to pursue this career and her role in the department.

"Estuary ecology is a scientific field, therefore, it is imperative to do mathematics and science in high school in order to gain university admission.

"A bachelor of science degree, which takes a minimum of three years to complete, is

the qualification that one has to complete in order to pursue a career in estuary ecology.

"My role as an estuary ecologist in the department includes developing and implementing estuarine research. This involves writing proposals, going on field trips, sample processing and report-writing. I also provide the department with scientific support and advice on issues related to estuarine management", Nhleko explained.



Estuary ecologist Jabulile Nhleko is also responsible for research.

Over 5,000 tonnes of waste removed during 30 Days at Sea operation



By **Gaopalelwe Moroane**

In October 2018, the Department of Environment, Forestry and Fisheries led a global marine crime law-enforcement operation – 30 Days at Sea.

The operation led to 359 ship inspections in South African ports and coastal waters, and a host of environmental violations being detected and necessary action taken.

Globally led by Interpol and coordinated by its global network of 122 national coordinators, 30 Days at Sea involved environmental, fisheries, maritime and border agencies, national police, customs, and port authorities.

The month-long operation in SA led to:

- 49 detections of environmental violations which will be addressed through enforcement notices;
- 10 cases of serious environmental noncompliances which will be dealt with through criminal investigations and;
- 27 vessels were identified for focussed MARPOL inspections with a gross tonnage of 1,250,214 tonnes.

In addition to the above, the following immediate results were reported:

- In excess of 5,000 tons of waste was removed from the marine environment;
- Revenue that would have been lost to the state will be recovered by the SA Revenue Service by following up on certain violations that were detected;
- Several unlawfully built structures within coastal public property which were detected during the operation will be addressed through enforcement

notices:

- Three cases dealing with serious discharges of sewage and potentially harmful pollutants exceeding the maximum threshold of three companies' coastal discharge permits are currently being addressed and
- A first of its kind conviction of Ukrainian ship for illegally discharging sewage into coastal waters.

This compliance and enforcement response to pollution within the marine environment was aligned to Interpol's global enforcement operation, which attracted the participation of more than 50 countries and is the first Interpol-led global law-enforcement operation targeting particularly illegal discharges from vessels and illegal dumping at sea.

SA participation in the 30 Days at Sea operation demonstrates the commitment of the South African government to combat marine environmental crimes.

Department declares 20 new MPAs

By **Tshego Letshwiti**

In May 2019 the Department of Environment, Forestry and Fisheries officially declared the long-awaited new network of 20 Marine Protected Areas (MPAs). Work on the new approved network of MPAs dates back to 2014, when the government endorsed a plan to achieve, as part of Operation Phakisa: Ocean Economy, a viable network of MPAs.

Some benefits of the new network of MPAs include an increase in the spatial protection of SA's ocean environment from the current 0.4% to 5.4%, providing some protection to 90% of habitat types, as well as contributing to global protection in line with SA's commitment to the Convention on Biological Diversity, a sister convention to those on climate change and sustainable development.

MPAs provide safe spaces in which fish can breed undisturbed. They are essential to maintaining eco-certification of the South African deep-sea trawl fishery.

This certification process assesses whether habitat and nursery areas for the hake



MPA tourism activities / STEVE BENJAMIN, ACEP IMIDIA PROJECT, PETER CHADWICK

fishery are adequately protected. MPAs also contribute to growing SA's marine eco-tourism sector by providing undisturbed natural habitat for whales, sharks, seals, dolphins, turtles and seabirds for international and domestic tourists to experience.

Additionally, an adequate network of MPAs will also provide the basis for ongoing resilience to the impact of climate change.

Oceans are an essential component of the climate system, absorbing and transferring heat, and regulating the exchange of carbon dioxide (CO₂) with the atmosphere.

With increasing CO₂ levels,

and rising ocean temperatures, this regulatory capacity is at risk.

SA's ocean space, which is one of the most varied in the world, is highly productive with rich biodiversity providing for living and nonliving resources that contribute significantly to the country's economy and to job creation.

As we grow and intensify the ocean economy, it is essential to provide the necessary protection to a representative sample of marine ecosystems, thereby ensuring their resilience to human use and impact, and to the impacts associated with climate change.

8 June is World Oceans Day

This year we celebrate the day under the theme: **Gender and the Ocean**

The theme opens a platform to address the importance of Sustainable Development Goal 5 which aims to address gender equality, towards achieving effective and sustainable use of ocean resources and realising their full socio-economic potential.

The Department celebrates the contribution of women in the ocean space and promote opportunities of careers in the oceans space.



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Department of Environment, Forestry and Fisheries appoints environment ambassadors

By **Nomzolisi Mashiyi, Madimetja Mogotlane and Abraham Shoba**

Programme helps create jobs in impoverished municipalities

A total of 153 youth from different municipalities around the country have been appointed as project support officers for the Department of Environment, Forestry and Fisheries.

The environment ambassadors, as they are called, will

participate in this programme for three years and extend their environmental management education to people in their local municipalities.

The primary objective of the programme is to educate communities about conserva-

tion and protection of environment while creating job opportunities and skills development for young people.

The department initiated the youth community outreach programme in 2018. Its key objectives are:

- Promote active participation of youth in environmental management;
- Create job opportunities for youth;
- Environment-related skills development opportunities;
- Work experience for employability;
- Enhance the environment capacity to enable effective and efficient execution of environment functions in municipalities.

municipalities.

In each municipality there will be 23 young people and 44 in each metro. 213 of these young people are graduates with a degree or national diploma in environment-related studies, bonafides or originate from the jurisdiction of the municipalities.

To date, 184 out of 213 have been appointed and placed in the municipalities.



Sphamandla Mbatha,

who has a national diploma in environmental science, says he wants to learn as much as he can about the environment sector. "In the next three years, I want to teach my community about maintaining a clean and healthy environment for future generations.

"I would like to thank the department for giving me such an unimaginable opportunity and I hope other graduates will also be given the same opportunity," he said.

"I feel immensely privileged to be afforded this opportunity by the Department of Environment, Forestry and Fisheries and I aim to fully take advantage of this opportunity to do my best to achieve all my goals, as well as to leave a legacy and a mindset that promotes environmental conservation and stewardship in communities within my municipality. This is also a huge opportunity to apply my theoretical knowledge in a practical environment."



Innocentia Magubane

holds a national diploma in nature conservation from Paulpietersburg in Edumbe local municipality in KwaZulu-Natal. Upon completing her secondary school in 1998, she stayed at home unable to persevere tertiary education due to financial constraints.

In 2010, she started working as a security guard and used her earnings to register with the University of South Africa.

Working full time and paying for her tuition with the

help of NSFAS, she went on to complete her diploma in 2017.

In 2018, she was advised by a friend to register as an unemployed graduate in the local municipality's database. It was from registering with the municipality's database that the Department of Environment, Forestry and Fisheries got hold of her CV and subsequently successfully interviewed her to be one of the youth employed as youth environmental coordinators in the youth community outreach programme.



completed five modules in risks and responses, action to address an environmental issue, environmental education as a community awareness tool, development of an original environmental learning programme and workplace evidence collection.

The students also received nonaccredited training interventions such as open space greening, career guidance, CV writing, presentation skills and motivational speaking.

Malusi Vatsha, CEO of Delta Environmental Centre, said: "Through YES one student was able to start a small recycling business, and five students have found other employment."

Moreover, 70 of the best-performing students were given an opportunity to apply for the second-year enrolment of their diploma, while four students opted to venture into other fields of study.

Empowering the youth with skills

By **Nomvuyo Mlotshwa**

The youth empowerment programme implemented by the environmental protection and infrastructure programmes seeks to assist the youth become more employable through providing employer-centric skills training. It offers skills development

based on the national list of occupations in high demand as published by the department of higher education and training.

In November 2018, 120 youth from Gauteng graduated with the University of South Africa after successful completion of a 12-month recycling and entrepreneurship certificate. The graduates



Young people become qualified through the Department of Environment, Forestry and Fisheries. /MADIMETJA MOGOTLANE



Shark dissector Steven Mabungana hosts educational sessions in schools, teaching kids about environmental careers. /VERONICA MAHLABA

Opportunities for youth in environment

Fresh young minds like yours are needed to revolutionise the way we travel, the energy we use, minimise our waste as well as sustainably feed our people and build our houses and towns among others.

To pursue a career in the sector, students would generally need to study certain subjects in grade 12, depending on the specific career you have in mind.

Most programmes that are relevant to environmental careers are classified as science programmes.

Relevant subjects in grade 12 include mathematics, biology, physical sciences, english and/or geography.



range of fields and disciplines.

The Department of Environment, Forestry and Fisheries has implemented an internship programme which aims to create a pipeline of candidates that may compete for appointments in and outside the department.

Unemployed South African undergraduate and postgraduate students, who have not been previously employed un-

der any internship programme, can apply in fields that are in line with the department's core business.

Applicants should not be above 35 years. Applications for 2019/2020 will open in October.

For more information contact: Department of Environment, Forestry and Fisheries. Mr Thomas Mathiba director: sector education, training and development
Tel: 012 310 3653
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On a regular basis, the Department of Environment, Forestry and Fisheries hosts career expos at different locations across the country to increase knowledge on environmental careers and to help students make the right career choices at tertiary level.

Career opportunities and bursaries offered by Department of Environment, Forestry and Fisheries that learners and unemployed

Find us at a Career Expo near you

youth are as follows and not limited to the list:

- Environmental Law
- Resource Economics
- Waste and Pollution Management
- Environmental Sciences
- Chemistry / Chemical Engineering
- Marine Biology and Marine Sciences
- Toxicology

- Geographic Information Systems
- Conservation Planning and Conservation Biology
- Statistics

The expos also provide exhibitors an opportunity to advertise their work opportunities on various fields of work, bursaries, internship programmes, learnership programmes and graduate programmes.



Projects changing lives, putting food on the table

By **Salome Tsoka**

Mbali Goge, the provincial coordinator for Working on Wetlands KwaZulu-Natal, says she's found working on wetlands' experience very rewarding and feels proud to have been part of a programme that strived to help improve water security in rural communities.

"From an ecological perspective, when we fix wetlands we are helping the environment increase its ability to store water in the soil by itself.

"And for communities that rely on the land, either through fetching water from the rivers, irrigation or livestock feeding, we have made a difference by fixing their wetlands which can now provide water directly to the people.

"Wetlands have many benefits including the fact that they are able to hold water for longer. When wetlands are wetter, they provide other benefits. Communities are now able to harvest natural material to make mats and baskets. During the flooding season, people fish in the wetlands, where they sometimes find pockets of fish.

"Wetlands have also helped communities improve grazing in the summer and winter seasons," she said.

Goge also adds that the programme has helped employ many community members. It has also opened doors for women in the area.

"From a financial perspective, the programme has enabled some of the communities to achieve quite a bit.

"With the income people are making from our projects, they are able to afford a better education and lifestyle for their children and so many have built houses since the project has started.



Wetlands have also helped communities [to] improve grazing



Lufuno Nemakhavhani is pursuing a degree in Environmental Management.

Wetlands vital for SA's water resources

1. What are you studying? Master's degree in environmental management.

2. Where are you studying? University of Free State.

3. What does your research about wetlands entail?

It is the assessment of wetland rehabilitation interventions using hydrology, geomorphology and vegetation in Kgaswane Mountain Reserve.

4. What are you hoping to find or prove from your research?

I am hoping to find out if wetland rehabilitation structures that have been put in place at the Kgaswane Mountain Reserve are functional and serving its purpose.

5. What made you interested in the field that you are studying?

I work with wetlands and have grown interested in learning more about them and how to conserve them.

6. Why do you think wetlands are important?

They are important because they provide ecological services to us and they store up water which is important in South Africa.

7. Would you recommend your field of study to the youth out there?

Yes, because it is a field that is crucial in our country and we need more researchers to help protect the country's wetlands.

8. How has working with Department of Environment, Forestry and Fisheries Working for Wetlands assisted you in your field or studies?

Department of Environment, Forestry and Fisheries Working for Wetlands is the one that implemented the rehabilitation structures on site and have made it easier for me to work on structures and have information easily accessible.



The National Pollution Laboratory is situated at Walter Sisulu University.

National pollution lab is state-of-the-art gem

The national pollution laboratory (NPL), stationed at the Walter Sisulu University's Mthatha Campus, is a key part of the operations involved in monitoring oceans and coasts under the Department of Environment, Forestry and Fisheries.

Ayanda Matoti, the department's director of monitoring oceans and coasts, leads us to meet the laboratory's staff and experience an eye-opening tour of this world-class facility.

Dr Motebang Nakin, the NPL's acting project manager, informs us that the lab is managed by a steering committee comprised of three officials from the Department of Environment, Forestry and Fisheries, and three scientists

based at the Walter Sisulu University.

The facility is strategically placed in the Eastern Cape, which has the highest number of estuaries leading into ocean waters, with important consequences as sites for evaluating coastal water contamination. Nakin reveals that the laboratory is poised to implement phase two of its operations, which will see the expansion of lab space, as well as office space for hosting visiting scientists.

Leading the onsite tour is Dr IJ Ntozakhe, the lab's technical and principal investigator.

He makes the point that, although the Department of Environment, Forestry and Fisheries is funding the facility, it is



Andisiwe Rwekwana-Mdudumane, Chemical Technician at the NPL, testing the chemical composition of a water sample.

run independently at the Walter Sisulu University, in keeping with the international reg-

ulations and requirements for such a laboratory.

As a nonprofit entity, the NPL is enabled to carry out affordable monitoring of the quality of water and pollution of coastline areas.

The establishment of the NPL was a core development of Operation Phakisa initiatives focused on a national ocean and water quality monitoring programme.

As such, the lab features state-of-the-art equipment that no other facility in the country has. In addition to carrying out its own sample-gathering activities in coastal areas, Ntozakhe says the lab also allows members of the public, business entities and other stakeholders to bring in samples for testing.

Operationally, the facility contains a micro-biological lab, a chemical lab, a GC-MS prep room, an ICP-MS prep room, and a cold room where all collected samples are kept.

In the micro-biology lab, samples are tested for the pres-

ence of bacteria in the water. The chemistry lab analyses the chemical composition of collected samples, determining the quality of the water based on components such as fluoride, phosphates, chlorides, ammonia, nitrates and silica. In the GC-MS prep room the separation of organic materials, compounds and chemicals takes place, where the presence of contaminants such as petrol, diesel or oil can be determined. The ICP-MS room is where the presence of inorganic materials, such as mercury and metals, is tested.

At present five technicians are working in the different labs, with plans to increase this number as phase two of the NPL expansion programme kicks in. The microbiology lab, for instance, will soon be split into two different labs, with one focusing on testing for pathogenic (poisonous) and the other for non-pathogenic bacteria.

The current pool of technicians hold degrees and post-graduate qualifications in biology, chemistry and micro-biology, and receive further training in the course of their work at the NPL. For example, Silindokuhle Ndlela, a technician in the micro-biology lab, has a BSc in microbiology, is studying towards an MSc in the same field through the university, and has received on-the-job training such as how to skipper the boat used by the NPL to collect water samples from estuaries such as the one in Qolorha.

She encourages young people who have physical science subjects at high school level to consider pursuing a career in what she describes as, "an exciting field in the sciences".

The SA Agulhas II

By **Perfect Hlongwane**

The SA Agulhas II is a huge, nine-deck ship, dwarfing every other boat in sight as it sits majestically in harbour.

The gigantic ship is owned by the department of environmental affairs, and is of a class referred to as "Icebreakers".

It is capable of sailing up to and around the South Pole, navigating treacherous Antarctic waters with relative ease. Over 134m long, the ship has been at sea since its maiden voyage in 2012.

As you go aboard the ship, mounting a steep-rising steel staircase that delivers you to deck number five, you have four decks of the ship now below you, and another four above. Our tour guide on the day, Floyd Chauke, tells us about the core functions of the Agulhas.

Floyd is a deputy director for health and safety in the department

and is based in Cape Town.

He explains that the ship is an offshore supply vessel that is also capable of driving and conducting scientific research.

Professionalism and efficiency characterise the crew of the ship, from the most senior to the most junior officers, and this has earned them the respect of their peers in international waters.

The Agulhas features advanced technology which enables ease of navigation and safety of passage out at sea, with both automatic and



The nine-deck ship is the pride of SA.

manual steering being necessary to complete its various expeditions.

It is specially designed to supply South African research stations in the Antarctic, as well as to carry out scientific research.

A single trip aboard the ship can take up to 35 days, and the presence of fully-equipped facilities such as an onboard hospital and canteen are necessary to keep the crew healthy as well as well-nourished.

Being a huge, mobile research facility as well, there are several scientific laboratories on board, where this work is conducted. On any given trip undertaken by the Agulhas,

the crew would also consist of oceanographic,

marine and off-shore scientists

engaged in conducting this research and using the on-board labs in the course of doing so.

The ship is capable of carrying up to three helicopters at a time, and in addition to

these helipads, the Agulhas also has cargo space for caterpillars, all of which are needed in the course of conducting research and delivering supplies.

An interesting fact about the Agulhas II is that the ship is dedicated to the memory of the iconic jazz and traditional blues singer Miriam Makeba.

On board, on the seventh deck, the ship houses the luxurious, spacious Miriam Makeba lounge, adorned with stunning colour and black-and-white images of Mama Afrika, as the legendary singer was fondly called worldwide.

This is where the crew and passengers can relax, as evidenced by the bar and exquisite entertainment areas that form part of the lounge.

As a national asset, the SA Agulhas II has made provisions for the public to come on board and see the ship's extensive facilities first hand, and become better informed about the important work the ship makes possible.

There are two open days a year set aside for these public viewings, with one day being reserved for school children and the other open to the general population.



Let's combat desertification together

World Day to Combat Desertification (WDCD) is observed as a unique occasion to remind everybody that desertification, land degradation and the effects of drought (DLDD) can be effectively tackled and that solutions are possible.

The 2019 WDCD will be celebrated under the theme: "25 years of implementation of the convention and beyond", focusing on the path the convention has taken, and the future the convention could bring. The slogan is: "Let's grow the future together".

The 2019's theme and a slogan is calling us to celebrate the 25 years of progress made on sustainable land management (SLM) and how we envision the world in which land

degradation neutrality (LDN) provides a solid basis for poverty reduction, food and water security and climate change mitigation and adaptation

Different reports indicate that DLDD affects many countries. The recurrent and growing threats of forest fires, heatwaves, mass migrations, flash floods, sea-level rise as well as food and water insecurity will become more evident.

Given that, there is an urgent need to address these challenges through rehabilitation, conservation and restoration of degraded landscapes through SLM practices and approaches.

The key messages for the 2019 WDCD are:

- There is an urgent need to grow economies and secure enough food, clean water and energy by ensuring land users are enabling environment for SLM; and SLM should be everyone's business.

Together, we can restore the productivity of over 2-billion hectares of degraded lands and improve the livelihoods of more than 1.3-billion people around the world.

With the costs of land restoration in the range of about R2,165.52 a hectare, achieving LDN is one of the most cost-effective ways not only to fight against hunger, but also to cope with climate change, secure water and energy resources and promote inclusive growth.



Impacts of desertification, land degradation and drought on agriculture and livelihoods.



Demonstration of interventions and activities to combat desertification.



There is an urgent need to rehabilitate, conserve and restore degraded landscapes through sustainable land management.

Who is protecting our environment for the wellbeing of present and future generations?

Why protect the environment?

The environment renders various natural services that provide human beings with natural resources which are critical for our survival. As technologically advanced as we might be, we will never be able to replicate its natural processes or resources.

Therefore, our health and wellbeing depends entirely on the integrity of our environment. By protecting our environment, we are not only saving animals and plants, but we are ensuring the survival of our species through conservation and sustainable practices.

The environment can be compared to the foundation of a building – as you remove critical parts of the foundation, the building weakens to a point where eventually the entire structure will collapse. Similarly, each plant and animal has a specific role in the environment, and as we destroy and remove them, we interfere with the natural processes that form the backbone of the ecosystem, eventually causing it to deteriorate beyond repair.

What is there to protect?

Our environment extends far beyond our everyday surroundings, it comprises of ev-

ery natural aspect of our beautiful country. SA's rivers and wetlands, mountains and plains, estuaries and oceans, magnificent coastline and landscapes all contain an exceptionally rich and varied array of life forms.

In fact, our country ranks as the third most biologically diverse country in the world, with SA having its very own Cape Floral Kingdom – one of only six Floral Kingdoms around the world.

SA also boasts unique and exceptionally rich coastal waters with the majority of the country bordered by two oceans, the Indian and Atlantic Oceans. This makes the country's coastline and marine ecosystems one of the most diverse in the world; and its ocean hosts about 83% of all known

marine fish families.

Who commits environmental crimes?

Environmental crimes are usually the result of calculated business decisions either to make money or save money. A very small proportion of environmental crimes are committed out of desperation or need.

The greed of environmental criminals is encouraged by the shortsighted perception that abusing or harming the environment does not matter.

Offenders are often middle class and educated. Their crimes are viewed as "white collar" and therefore not important or life-threatening. However, many of these crimes are undertaken by organised syndicates; and may consequently

not only be life-threatening, but also cost our country billions of rand each year.

Consequences of convictions for environmental crime

In addition to jail terms and fines, conviction in respect of an environmental crime may result in a civil judgment against the offender for:

- any loss or damage caused, including the cost of rehabilitation of the environment;
- the money made by the offender through the commission of the environmental crime
- the cost of investigation and prosecution

Employers whose employees commit environmental crimes, and directors of companies that commit environmental crimes, can also be criminally charged for that crime.

Cancellation of and disqualification for permits: A person who has been convicted of an environmental crime may have his/her permit withdrawn, and be disqualified for up to five years from obtaining another permit.

Forfeiture of items used to

commit environmental crimes: Any item, including vehicles, vessels and aircraft, used to commit an environmental crime may be forfeited to the government.

All of these legal mechanisms are in place to ensure that the polluter or poacher pays for the crime that they have committed.

How will I recognise an environmental crime?

Not all activities that impact on the environment are criminal. However, if the activity has or may have a significant negative effect on human health or wellbeing or on natural or managed ecosystems, it could be an environmental crime.

The suite of environmental legislation contains a number of provisions that criminalise certain types of behaviour with corresponding penalties.

These types of behaviour typically pose a risk to the environment; and include activities that are either completely prohibited; or are restricted and therefore require a permit or authorisation to be undertaken.

17 June is World Day to Combat Desertification

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25
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RESPONSE ON DROUGHT

The approach being employed by government in addressing the drought and land degradation problem, facilitates coherent and integrated intergovernmental responses, namely, the Landcare Programme, Working

for Water, Working on Fire and Working for Wetlands. These responses contribute to job creation, food security, skills development, conservation, land rehabilitation and restoration as well as rural development.



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Together we can beat AIR POLLUTION

Air pollution is the contamination of the air by harmful gases and particulates at concentrations that are higher than natural background levels. Since the onset of the industrial revolution, there has been a steady change in the composition of the atmosphere mainly due to the combustion of fossil fuels used for the generation of energy and transportation. Air Pollution has negative impacts on the environment in which we live. It causes health problems in humans and animals, damages plants, pollutes water, threatens aquatic life, deteriorates infrastructure, and reduces visibility.

Air Pollution facts:

- 92 per cent of people worldwide do not breathe clean air
- Air pollution costs the global economy \$5 trillion every year in welfare costs
- Ground-level ozone pollution is expected to reduce staple crop yields by 26 per cent by 2030

Effects of Air Pollution on Human Health

- Air pollution can affect human health in a number of ways with both acute (short-term) and chronic (Long-term) effects. Different groups of individuals are affected by air pollution in different ways depending on their level of sensitivity. Young children and elderly people often suffer more from the effects of air pollution.
- People with health problems such as asthma, heart and lung disease may also suffer more when exposed to polluted air. Continual exposure to air pollution affects the lungs of growing children and may aggravate or complicate medical conditions in the elderly.
- Short-term exposure to air pollution can aggravate the medical conditions of individuals with asthma and emphysema. Long-term health effects can include chronic respiratory disease, lung cancer, heart disease, and even damage to the brain, nerves, liver, or kidneys.

Transport:

- Emissions from the transport sector account for 10.8% of the country's total greenhouse gas emissions, with road transport being responsible for 91.2% of these GHG emissions.
- Vehicle emissions contribute to the deterioration in air quality, especially in urban areas. There is an increase in the number of privately owned vehicles in South Africa.
- There are various sources of emissions associated with airport activities. These include road traffic at and around airports, aircraft exhaust fumes, emissions from ground service equipment and auxiliary power units and airport buildings.

Households (Domestic) fuel burning:

- Domestic fuel burning results in pollutants such as sulphur dioxide, carbon monoxide, VOCs and particulates. The release of sulphur dioxide, or hydrogen sulphide and carbon dioxide is dependent on combustion and fuel characteristics. These affect the quality of air and result in compromised human health.
- A growing concern is the level of pollution from domestic fuel burning and the associated health effects. Low-income households and informal settlements are dependent on domestic fuels, such as coal, paraffin and wood, for cooking and heating
- Indoor combustion for cooking and heating, using coal, wood, paraffin or traditional sources of fuel (dung and agricultural residues) may produce high levels of particulate matter (condensed volatile organic vapours) and carbon monoxide.

Industrial emissions:

- Industry is a major contributor to air pollution in South Africa. The industrial/mining sector is also a major consumer of electricity nationally.
- Air pollution is a major concern in areas of heavy industrial development such as the Vaal Triangle Airshed Priority Area, South Durban Industrial Basin (SDIB) and the Highveld Priority Area (HPA).
- The generation of electricity through coal-fired power stations results in the emission of pollutants such as particulate matter, sulphur dioxide, nitrogen oxides and mercury.



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