WWF NEDBANK GREEN TRUST

30th CELEBRATION

Cover image: Kabeljou caught off Struisbaai Photo: Peter Chadwick

30 Years of Foresight and Change

Kogelberg coast, Western Cape Photo: Peter Chadwick

30 years of the WWF Nedbank Green Trust

Message from Mike Brown, Chief Executive, Nedbank Group

Established in 1990 at a time when few companies were talking 'green', the founders of the WWF Nedbank Green Trust saw the future. They recognised that the survival of society, of which business is a major part, depends on the coming together of all stakeholders to reduce their impact on the earth proactively and live within her limits.

Thirty years later, in 2020, the WWF Nedbank Green Trust celebrates three decades of funding catalytic projects that have brought real change to the lives of South Africans and to the environment on which we all depend. The Trust is funded through the Nedbank Green Affinity Programme, which has raised more than R300 million for over 200 community-based conservation projects.

The WWF Nedbank Green Trust's slogan, Igniting new ways for people and nature to thrive, has never been more relevant or imperative than it is today.

In 1990 Nedbank recognised the signs of a looming natural resource crisis; this was some 30 years before sustainability became a key global priority.

Nedbank realised the necessity of putting corporate clout and capital behind sustainable development in South Africa – one way to do this was the creation of the WWF Nedbank Green Trust.

The partnership's founding approach that business, government and communities should come together to accelerate conservation in South Africa was absolutely pioneering. Through this journey, sustainability also became embedded in the DNA and culture of Nedbank and our stakeholders, including our clients.

As a purpose-led business, we are proud to play both a lending and advocacy role in matters of sustainable development, including renewable energy, freshwater, agriculture, ecosystem conservation and climate change in ways that are sensitive to the local socioeconomic context and climate vulnerability.

We believe that the imperative to deliver a more prosperous society to billions of people, and the threat of climate change will lead to a fundamental reshaping of finance. As such, Nedbank embraces the Sustainable Development Goals, and endorses the objectives of the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement to guide our strategic direction.

We cannot do this on our own and the work undertaken by the WWF Nedbank Green Trust in terms of its climate change and energy programmes, and the many catalytic projects in freshwater, land, food, wildlife, oceans and leadership, are extremely important. The research associated with these projects helps to shape our thinking, as well as that of other key stakeholders, while the projects that are implemented are important demonstrations of what can be achieved on the ground through engagement with our country's diverse communities.

The winds of change are in our sails. This era's agenda is the call for massive change at a systemic level. We need real change in a relatively short space of time to our energy sector, our transportation sector, our food systems and our built environments. We have to respect and preserve our natural systems. As a bank, we are encouraged to see our clients actively responding to this agenda and needing investment from us to do so.

What remains a constant is the commitment by Nedbank, our clients and WWF-SA to bring about meaningful socio-environmental change through this innovative funding vehicle.

Using our financial expertise to do good is our purpose, not an empty rallying call. I believe it is the only way that we will succeed and build a society that we can be proud of. This means making decisions that respect the environment and its limits, and placing societal good above short-term profits. Our partnership with the WWF and investment in the WWF Nedbank Green Trust is evidence of one of the ways that we can do this.

– Mike Brown

Message from Dr Morné du Plessis, CEO WWF-SA

I can confidently say that in my 14 years with WWF-SA, our partnership with Nedbank has never been more productive, more solid and of higher impact than it is right now. The signal of commitment emanates from Mike Brown, the CEO of Nedbank, and Vassi Naidoo, the Chair of the Nedbank Group and also the Chair of the WWF Nedbank Green Trust Board. The scale of their support engenders a wonderful mutual trust.

When Vassi says 'this is God's own work' about the projects and programmes, it motivates us tremendously. It speaks for itself that so many outstanding people have been part of the WWF Nedbank Green Trust, including long-standing trustee, John Kani, who holds the power of global influence, and who sends out a strong message of support simply by wearing a WWF Nedbank Green Trust t-shirt.

When we talk about the Green Trust – as it was first called – I can never think about its future without reflecting on the foresight of the founders 30 years ago. Nedbank recognised the centrality of the natural environment; that it underpins everything we are – the lives we live, the food we eat, the water we drink, our economies, livelihoods ... everything. So they put in place Africa's most sustainable, dynamic mechanism for supporting environmental issues at a time when there was no such understanding in the business world. The late Ivan May was one of the trust's pioneers, and we salute him and the CEOs of Nedbank and WWF-SA, then and now, for establishing and continuing to grow this unique relationship.

Since its inception, the Nedbank Green Affinity Programme has helped raise more than R300 million for the WWF Nedbank Green Trust. This has resulted in the funding of over 200 major conservation projects. Nedbank's contribution is without a doubt one of the most substantial income streams from business to the environmental sector.

In the early days the projects focused on 'glamorous' species, such as the cheetah and rhino, to market Nedbank as 'the green bank'. Conservation support from the trust has come a long way since then; today's projects span landscapes, waterscapes, seascapes and foodscapes.

The partnership has also made a phenomenal investment in people, enabling all those involved to pilot new approaches to sustainability through their projects, which have grown into high impact initiatives and processes.

The projects have nurtured an environmental culture – from primary schools to postgraduates – many of whom have grown into environmental leaders, occupying influential positions in their communities, government, business and organisations.

If there is a word to describe the WWF Nedbank Green Trust now and into the future, it is 'catalytic'. It ignites a spark that burns into a much bigger flame. Over the next 10 years, the emphasis will be on catalytic action; on doing new things and doing things differently for large-scale impact.

The Covid-19 pandemic has shown us just how quickly we need to be able to adapt and shift human behaviour, including rethinking every aspect of how we are managing our environment. The local and global crises we face are extremely serious, including the pandemic and its aftermath, climate change, food insecurity, freshwater shortages, unemployment and socio-economic instability. Unsustainable practices such as over-extraction of water, pollution of the environment and investment in fossil fuel generated energy, have to go. WWF-SA, Nedbank and the WWF Nedbank Green Trust have a massive role to play in reshaping society.

The work we do needs to be recognised as an essential service. Time is not on our side, so we must make sure that we are in the strongest possible position to achieve measurable impact.

'We have hit the limits of our ecological boundaries, or what nature can provide. Many key role players in government and society should have responded far earlier but hopefully the penny has now dropped about our absolute reliance on the natural environment. Changes need to be implemented as a matter of urgency, and the work of the WWF Nedbank Green Trust should be acknowledged as an essential service.'
– Dr Morné du Plessis

Message from Vassi Naidoo Chairman, Nedbank Group and WWF Nedbank Green Trust

Much has changed since the WWF Nedbank Green Trust started in 1990; some aspects for the better, such as mother and child mortality rates declining and education for women improving. Other aspects have become increasingly worse, as illustrated by the many wicked problems we are facing, including climate change, water shortages, joblessness, poverty, biodiversity loss, inclusion, diversity and gender violence.

The Covid-19 pandemic has laid bare these and many other challenges on the continent and internationally. As a result, many more people are facing food insecurity, many more are without jobs, and there is less capital available to invest in addressing the inequities in society.

That said, there is a way forward as all these issues are named, with targets set for addressing them in the Sustainable Development Goals (SDGs). The goals define what a prosperous, more equitable future looks like. They define a world that respects all people and natural resources, and it is only by pursuing both that we give ourselves a fighting chance for a prosperous future for all.

Over the next ten years, governments, civil society and the private sector need to work tirelessly towards meeting these goals. As we undertake this journey, the role of good governance and the highest ethical standards will be key. As the Chair of both Nedbank and the WWF Nedbank Green Trust I assure you that these standards will be adhered to as we fulfil our role in delivering better outcomes for all our stakeholders and communities.

Being part of the leadership of Nedbank and the WWF Nedbank Green Trust over the past five years has really highlighted for me how we are part of a nested system that is wholly dependent on the health of our natural environment and ecosystems for our well-being and prosperity.

Our natural systems are not something that we look after when we have the time; they are the foundation of a healthy and functioning society – something that we, as the private sector, rely on for our own long-term sustainability. As such, the work undertaken by the WWF Nedbank Green Trust to strengthen our ecosystems and the web of life they support across all environments, land and sea, urban and rural – including sustainable agriculture, water shortages, food and energy security, and community well-being – is inspiring to see.

At Nedbank we have the power to drive real change through our core business of lending and investing, using a strategic lens that considers carefully whom we lend to and for what purpose. We understand that our greatest impact, both positive and negative, is through our clients and so we work together with them to maximise the positive and minimise the negative. Similarly, the WWF Nedbank Green Trust works with a wide range of stakeholders to implement catalytic projects that seek to strengthen the fabric of our natural and social ecosystems.

The greatest contribution that we can make to the sustainable development agenda is through the development of commercial offerings that deliver on our purpose. This includes the creation of innovative products and services, as well as finance and investment solutions that meet the Sustainable Development Goals, thereby enabling our clients to achieve the lifestyle and business outcomes they desire. Partnerships like the WWF Nedbank Green Trust align well with this key strategic imperative.
– Vassi Naidoo

Nedbank and WWF -SA

For more than five decades WWF-SA has been engaging with South Africa's land, freshwater, food, oceans, climate change, energy, biodiversity and environmental leadership challenges. It is immersed in awareness-raising, advocacy, community engagement and conservation at all levels of society. It drives action and stewardship initiatives with communities, businesses and government; helps to identify risks and opportunities; and strives to ensure South Africa has healthy life-sustaining, water-supplying landscapes.

To contribute to this, Nedbank partnered with WWF-SA over the years in the Water Balance Programme, investing R12m in funding over eight years, and in the Sustainable Agriculture Programme, investing R18m over six years. These long-term projects focused on clearing water-consuming invasive alien vegetation in vital water catchments to increase water availability downstream and on promoting better farming and production practices in the fruit, dairy, beef, wine and sugar sectors.

In 2019 Nedbank took the partnership with WWF-SA to the next level by entering into a five-year, R25m water source area conservation partnership. The focus of this programme is on the conservation and legal protection of South Africa's Strategic Water Source Areas, while at the same time supporting communities that rely on this water for their livelihoods.

The new partnership is focused on prioritising water security, reducing land degradation and improving local economic opportunities for rural communities in the Matatiele district of Eastern Cape, home to the Umzimvubu Catchment, the third-largest river system in southern Africa and one of South Africa's strategic water source areas. The hope is that, over the five years of the partnership, the project will demonstrate the value of the water source partnership model and deliver valuable learning and insights that can be replicated nationally.

While this new partnership is still in its early stages, many important milestones were achieved in 2019. These build on the successes over several years of the Matatiele-based organisation Environmental Rural Solutions, with the WWF Nedbank Green Trust as one of its key project partners. The successes include the creation of more than 600 jobs in the area and increased incomes in over 1 100 households, as well as the clearing of invasive alien vegetation on 1 500 ha of land and the associated replenishment of 1,9 billion litres of water in the system.

Augustine Morkel, Executive Manager: Operations

When I joined WWF-SA in 2011, a fundamental conversation was taking place between WWF-SA and Nedbank regarding the future direction of the WWF Nedbank Green Trust. The decision taken was to shift focus from funding smaller projects to funding more strategically in support of innovative and catalytic (bigger bang for bucks) conservation projects that bring long-lasting benefits to all people and the natural environment in South Africa.

Several projects of this magnitude had been funded during the Trust's first 20 years, but over the past ten years this has been stepped up. It has led to a powerful portfolio across our core areas, namely, freshwater, oceans, land, climate and energy, food and wildlife, with people at the centre of everything we do in delivering our conservation outcomes.

A key aspect of innovative projects with catalytic potential is that change doesn't happen quickly; it takes time to bring about fundamental change. Further, all the projects need to be connected to others to achieve collective impact and create systems of success. The WWF Nedbank Green Trust has been unique in its willingness to go the distance and work with multiple partners to achieve what is good for South Africa, based on sound science.

This includes working at a policy level, and over the years the WWF Nedbank Green Trust has achieved major breakthroughs and worked with incredible leaders. One such leader was Dr Kader Asmal, Minister of Water Affairs and Forestry from 1994 to 1999 during Nelson Mandela's presidency. WWF-SA's Dr Guy Preston served as Dr Asmal's advisor, leading to the creation of the Working for Water Programme, a pioneering national water conservation initiative and jobs and skills development programme. This initiative, in turn, inspired Working on Fire, Working for Wetlands and Working for Land.

Today, these all form part of the huge National Resource Management Programme within the Department of the Environment, Forestry and Fisheries (DEFF). A further policy level success for the WWF Nedbank Green Trust is the achievement of having South Africa's strategic water source areas written into legislation. Water is precious to South Africa.

Another first is our partnership with the South African National Biodiversity Institute (SANBI) in the development of South Africa's network of Marine Protected Areas (MPAs), driven by Dr Kerry Sink, SANBI's marine programme manager and the WWF Living Planet award winner in 2017.

Two pioneering projects the WWF Nedbank Green Trust supported over several years that initiated the national environmental stewardship programme, are the Enkangala Grassland Programme led by WWF-SA's Angus Burns and the Biodiversity and Wine Initiative led by WWF-SA's Inge Kotze. These projects initiated a national environmental stewardship programme, which was a game-changer for South Africa as it brought private and community landowners into the conservation conversations, breaking down many legacy barriers.

To further incentivise private landowners to commit their land to conservation in perpetuity, the WWF Nedbank Green Trust supported a project led by Candice Stevens (formerly of BirdLife SA, now the Wilderness Foundation) who successfully lobbied National Treasury to offer fiscal benefits for participating landowners. It's a global first, and many countries are following our lead.

Our longest running project is the Environmental Leaders Programme, headed by WWF-SA's Dr Glenda Raven, to develop a pipeline of postgraduate environmental leaders. Following their internships, they go on to take up influential positions in all sectors as environmental and biodiversity sustainability are now mainstream activities within the economy, locally and globally.

For the future, we call on the collective wisdom of all our partners, including individual citizens, communities, scientists, universities, businesses and organisations to develop innovative, catalytic and scalable solutions to address the major sustainability issues our country is facing. Together, we can achieve so much over the next decade.

Priya Naidoo
Group Executive: Strategy, Nedbank Group and trustee, WWF Nedbank Green Trust

Guided by our purpose 'To use our financial expertise to do good for individuals, families businesses and society', Nedbank inherently understands that a thriving bank needs to operate in a thriving society, and that our success is contingent on the degree to which we deliver value to society. As such, it is essential to understand how we can contribute to a better society, and this is why it is such a privilege to be involved with the WWF Nedbank Green Trust, as it is one of the biggest funders of socio-environmental projects in the country.

The ethos of the WWF Nedbank Green Trust aligns well with what Nedbank stands for, and the fact that we actually invest in the Trust on behalf of our clients makes the alignment even more powerful. It is a legacy of which we are all so proud.

The partnership model of the WWF Nedbank Green Trust is essential and has resulted in South Africa's most prominent government and non-government organisations partnering with Nedbank and WWF-SA. To these partners we say thank you, as your knowledge, passion, expertise and commitment have been seminal to the WWF Nedbank Green Trust's success. You have helped us to gain a better understanding of sustainable development and the role of a financial institution in its delivery if we are to achieve a better future for all.

We are constantly looking for new ways to support the WWF Nedbank Green Trust and include our clients in this support. A recent development is the inclusion in our Greenbacks programme. Every Nedbank client is automatically a Greenbacks member, earning Greenbacks from banking activities and transactions for which Nedbank makes commensurate contributions to a range of trusts including the WWF Nedbank Green Trust – at no cost to the client.

With 30 years behind us, there is still so much work to be done and we look forward to the next 30 years and seeing the tangible results from another 200-plus projects in this amazing country and continent we call home.

We are confident that we can effect long-term systemic change through the provision of innovative financial solutions that deliver on the Sustainable Development Goals (SDGs). The financial models to drive conservation, restoration and sustainable use of ecosystems are still in the early stages of development but they are happening, and so much of our support to drive change in this regard has been through the very successful WWF Nedbank Green Trust partnership. The impact of this partnership over the last 30 years has been immense with the Trust being the biggest supporter of socio-environmental projects in South Africa.
– Priya Naidoo

Sustainable growth and development

Banks play a crucial role in facilitating sustainable growth and development by moving capital to where it is required. A deep understanding of purpose helps to guide strategy and decision-making in this regard. Some examples of how we are bringing our purpose to life through lending include:

- Our commitment to supporting the development of a low-cost, sustainable and balanced energy mix for the country. To date we have arranged 42 transactions in renewable-energy projects under REIPPP, underwriting a total of R35,9bn. Other projects include the funding of a solar refrigeration plant for Idea Fruit and the financing of Africa's first floating solar generation park on a fruit farm in the Western Cape.
- We were the first commercial bank in SA to launch a green bond on the JSE, raising R1,7bn to support renewable-energy projects.
- Nedbank also launched South Africa's first 'green' tier 2 capital instrument. This R2bn SDG-linked bond is the first of its kind in South Africa and is listed on the Green Bonds segment of the JSE. It was created in partnership with the African Development Bank and will see Nedbank actively funding the origination of impact-based assets that will not only promote immediate, proactive sustainable development, but also ensure the long-term sustainability and positive impact of the bank's balance sheet into the future.

Justin Smith,
Head of Business Development

It's amazing that we are celebrating 30 years of this incredible partnership and I'm lucky to have seen both sides of it, initially through my position as head of sustainability at Nedbank from 2003 to 2008. The working relationship with WWF-SA was so appealing that I eventually moved over to it, which is a good reflection of the nature of this partnership that has evolved over the years to become a model of true mutual benefit between the NGO and corporate sector.

When I was at Nedbank, my boss was the head of governance, Selby Baqwa who was also a WWF Nedbank Green Trust trustee. We developed a strong sustainability partnership with WWF during the foundation of the WWF Green Trust, led at the time by Thérèse Brinkcate. Selby was previously the first Public Protector in the democratic South Africa, and he brought incredible insight about how government and our country was changing and how environmental conservation needed to do the same to be foregrounded.

Towards achieving this, it was important to create a new image of conservation. At the time, many people associated conservation with a couple of white guys in khaki shorts running around the bush, whereas conservation needed to show that it is about everybody; that we cannot live without the natural environment and its resources ... the air we breathe, the water we drink, and the food we eat.

We can confidently say that the image and understanding of conservation and sustainability has substantially changed. The projects funded by the WWF Nedbank Green Trust as well as the multiple additional projects that Nedbank undertakes with WWF, have significantly contributed to this.

Today, I work closely with Nedbank's head of sustainability, Brigitte Burnett, who is a member of the WWF Nedbank Green Trust management committee. It's the ideal situation as we are able to see where WWF Nedbank Green Trust projects can be built into part of a bigger partnership between WWF and Nedbank, such as the scaling up of water conservation and the climate transition space, job creation and green business development. WWF is very much a part of Nedbank today, hence the truism of the bank's green DNA, with sustainability embedded in the Nedbank way.

Ten years from now I hope that together we have an even greater range of clear and strong commitments to sustainability and to our energy and climate future, with every sector pushing harder in terms of achieving the Sustainable Development Goals. Nedbank has incredible leverage in this regard.

In the immediate sense though, 2020 and the Covid-19 pandemic has forced us all to adjust to different ways of working, and while some of our field work has been delayed, the core conservation work, strategy and planning has continued. Our funders and supporters have been really understanding about unavoidable delays and hopefully everything is kicking safely back into action. Many conservation entities are dependent on tourism for their revenue and we will need to work together to find new ways to fund and support the sector. The WWF Nedbank Green Trust has also responded to the challenges posed by Covid-19 by supporting a range of food and water security projects as a specific focus in 2020. All this reflects on just how critical mutually supportive relationships are, with South Africa's inimitable natural treasures and people at the heart.

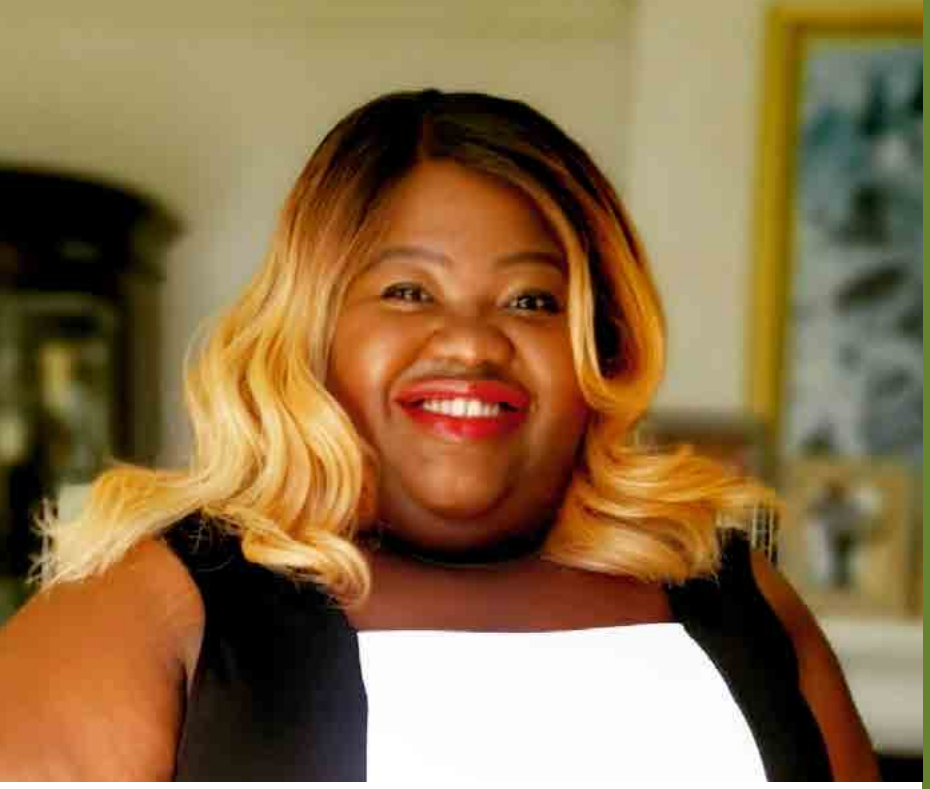
Theressa Frantz, Head of Environmental Programmes

There is a growing understanding of the inextricable link between people and the natural environment. Many South Africans are directly experiencing this via extreme weather condition impacts associated with climate change, including drought and floods. There is also an increased awareness of the consequences of consumption, most notably the problem of single use plastics and the need to change from a take-make-waste system to a circular system, the latter offering green job opportunities.

Environmental or green jobs are critically important in the South African context with our increasing levels of unemployment and environmental challenges. They support a regenerative economy, such as the rehabilitation of degraded ecosystems through the removal of alien invasive plants (AIPs) from water source areas to free up water and increase its flow. The biomass from alien clearing is then used to produce fuel, furniture and other products, generating income while benefiting our ecosystems and environment.

The continued loss of biodiversity and freshwater resources as well as climate change are key areas for society, government and industry to collaboratively address. All of these areas are heavily impacted by the human production and consumption footprint. Natural landscapes and forests are shrinking as the human production footprint increases, resulting in increased loss of biodiversity. Where indigenous forests are destroyed, the absorption of carbon dioxide decreases, exacerbating the build-up of greenhouse gases in the atmosphere.

Sustainable production practices that take into account the impacts on biodiversity and water resources, together with the rehabilitation of degraded ecosystems are critical in halting the loss of biodiversity. Efforts for changed behaviour by consumers and producers are key, as we are all major actors in the production and consumption footprint. The WWF Nedbank Green Trust is instrumental in supporting novel solutions that combine environmental and social challenges such as food insecurity, by considering the full value chain of food production and its impact on biodiversity and ecosystem services. These production landscapes greatly benefit from the biodiversity stewardship approach which applies to terrestrial and marine landscapes, and require co-management with the communities that depend on them.



Nomonde Mxhalisa, Communications and Marketing Coordinator, WWF Nedbank Green Trust

How and why I do this work is emotional for me. I wanted to work with WWF and the WWF Nedbank Green Trust because as an intersectional feminist it's critical for me to work for an organisation that recognises – and addresses – oppression's many layers. These layers collectively create the situation in which we find ourselves, with escalating poverty and environmental degradation. In response, the WWF Nedbank Green Trust supports conservation solutions that reconnect people with the natural environment in a way that makes their lives better and the environment better.

The starting point is that the environment is political and we are political animals embedded in an ecosystem, the very survival of which is also political. If we destroy our biodiversity and ecosystems, we put all life at risk, including ourselves. It deeply frustrates me that so many people don't see that these issues are about us. If we run out of freshwater, it will change our world and create an even more precarious political condition.

One of the WWF Nedbank Green Trust projects that concurrently addresses livelihoods and ecosystem services is in the rural Eastern Cape region of Matatiele. It is working on catchment restoration here at the source of one of South Africa's largest river systems, by healing the grasslands through improved communal livestock grazing methods. Healthy grasslands play a massive role in water storage and erosion control. At the same time, livestock can fatten up on the rich grasslands and the communal farmers and communities are able to derive more income.

Experiencing projects like this through the WWF Nedbank Green Trust has been such an incredible journey. I am a city girl to the bone who used to think that rural life was my grandmother's home half an hour from the city until I started visiting deep rural South Africa.

Our push is for every single South African – urban and rural, rich and poor – to appreciate how inseparable we are from the natural environment, and that each one of us needs to be part of the behavioural change required to start repairing the damage we have done to this incredible tapestry called Earth.

So where to from here? I would really love to see the wonderful work in our rural areas, notably our farming and food security projects, being upscaled in the urban areas. The rate of movement from the rural areas to the cities is increasing exponentially. Urban food security projects will become more important than ever to improve local food production and at the same time expand awareness of food production methods that use less water and no chemical fertilisers.

An example is the WWF Nedbank Green Trust-funded 17 Shaft agroecology project. Situated between Johannesburg's inner city and Soweto, it has trained urban and rural smallholders in the skill of creating rich, nutritious soil and growing beautiful healthy vegetables. The success of the project is visible in the smallholder farms it catalysed, including a number of women farmers who say that as a result of this training they are now feeding their families and communities, and sharing what they have learnt.

This approach creates hope, it improves people's health and, as we celebrate 30 years of the WWF Nedbank Green Trust, it ensures that sustainability is not just a word, but a vision that is implemented, lived and celebrated.

Heather Dugmore, Author of the book

A recent study undertaken for one of the world's largest insurers, the Swiss Re Group, found that 55% (US$41.7 trillion) of the entire global GDP depends on high functioning biodiversity and ecosystem services (BES). From a risk perspective, the mounting threats to BES increase the risk of collapse in both developing and advanced economies. Among the G20 economies, the study situates South Africa and Australia at the top of the rankings of fragile BES, with the impact of water scarcity as a key cause.

South Africa stands to lose so much given our extraordinary biodiversity: over 540 terrestrial and freshwater sites in South Africa qualify as global Key Biodiversity Areas (KBAs) according to the new global KBA Standard. Hopefully we might finally have reached a turning point in the critical need for action, now that the global insurance industry and big business has collectively started jumping.

Nedbank stands out as a clear frontrunner in environmental sustainability. Over the past 30 years, the many outstanding projects supported by the WWF Nedbank Trust have been hard at work establishing the groundwork and legislation required to help re-route South Africa into a world of what really matters; a world where urban and rural people alike benefit from the fruits of a *BES-focused* economy; where the notion that the natural environment is us becomes the lived reality.

Tobie Badenhorst

Yvonne Verrall

Living on a farm in the Karoo escarpment grasslands as I do, for me there is a very clear analogy. If you overgraze a farm and abuse the freshwater supply by extracting as much as possible, the grasslands will turn to desert or convert to unpalatable species, and the water will run out. When this happens, you cannot simply discard the farm, buy another and repeat the process – as those with means tended to do when land was more affordable. Land is too expensive for us to be wasteful of it; too expensive financially and too expensive in terms of the cost of losing biodiversity and ecosystem services. The extraction mindset has to be a thing of the past in all spheres of life.

It has been an enlightening journey and honour to have written about the WWF Nedbank Green Trust projects for many years, some of which are featured here. All the projects work directly with people, on the ground, in the ocean, in the water catchments, in the cities and rural areas. These are projects that deal with pressing issues affecting the daily lives and livelihoods of people throughout our country every day. Thirty years since the WWF Nedbank Green Trust started its work, so much about our country and world is still in chaos, but I have some hope that the natural environment and biodiversity and ecosystem services will finally take centre stage. There is no other way.

I have worked with remarkable people at Nedbank and WWF-SA, and I would like to thank you all for your collegiality and deep commitment to foresight and change. Thank you to the people with whom I work directly: Tobie Badenhorst – Head of Group Sponsorships and Cause Marketing at Nedbank; Yvonne Verrall – Marketing Manager: Nedbank Green Affinity, Green Leadership and Sustainability; and Nomonde Mxhalisa – Communications and Marketing Coordinator, WWF Nedbank Green Trust.

In all these years, this is the first that WWF-SA and Nedbank have not been able to get together for the annual field trip to visit some of the projects. The pandemic has kept us apart. But, as the Persian saying goes, this too shall pass, and we will meet again.

Dr Glenda Raven
Senior Manager: Environmental Leaders Programme, WWF-SA

Over the past ten years, with funding from the WWF Nedbank Green Trust, we have been able to support the development of over 200 diverse environmental leaders in South Africa. They are working as professionals across all sectors to address our country's complex and interdependent socio-economic and environmental challenges.

From the outset, the Environmental Leaders Programme has strongly focused on diversity, with particular emphasis on black and female South African graduates, in order to shift the profile of leadership in the sector. These graduates are from the full range of South African universities, disciplines, regions and cultures; from urban and rural centres – from the furthest corners in the north to the deepest south. This expansive spectrum of diverse leaders is the cornerstone of the programme.

Ten years on, we have significantly expanded this focus, and our key priority now is to deploy and support the development of these graduates in a range of public and private and public sector, and non-profit organisations where their skills are most needed and where they can actively contribute to addressing South Africa's key sustainability concerns. For example, we have an electrical engineering graduate working with one of our partners in developing alternative energy sources.

Our current goal is to further develop the senior leadership capability of our graduates, who are now growing into middle managers and poised for entry into senior management, heading departments, directorates, units, and organisations. The scope of work through which they contribute to sustainability, environmental management and conservation is huge and fast-growing. Over the next five years, our best investment would be to work with the top 100 environmental leaders from the cohort of 200 and support them in transitioning into excelling in sector leadership.

WWF's Graduate Internships

WWF's graduate internships provide a practical and paid work-based learning experience for honours and master's graduates to gain valuable experience and workplace-based training, and to connect into professional networks to establish their environmental careers. Every two years, WWF recruits a new cohort of graduates into a structured and mentored 12-month internship in a wide range of positions, from traditional green occupations, such as ecologists and marine biologists, to emerging areas of specialisation such as environmental economics, environmental engineers and architects designing green buildings.

The 2019/20 cohort of 50 interns was selected from 1079 applications from 17 universities, across a wide range of disciplines – from agricultural science to chemical engineering. Seventy-three percent of these interns are women and 81% are black South Africans. For the first time, the programme also placed two interns from neighbouring Zimbabwe.

The many organisations hosting the interns include conservation agencies, university-based research institutions, renewable energy and sustainability companies and the fishing industry, amongst others. The programme enjoys the long-standing support of several host organisations, such as the South African Biodiversity Institute (SANBI), Eastern Cape Parks and Tourism Agency, Wildlands Conservation Trust, the Nature's Valley Trust and the IUCN's TRAFFIC. Among the funders are the Fondation Hoffmann, WWF Nedbank Green Trust (since 2013), the National Skills Fund, Barloworld and affiliates of the South African Deep Sea Trawling Industry.

'82% of interns find work within three months of concluding the internship and a further 15% within six months.'
— Dr Glenda Raven

OCEANS

Subsistence fishers, Paternoster Photo: Peter Chadwick

Craig Smith
WWF-SA Senior Manager: Marine Programme

Over the past 30 years the pressure on marine living resources has increased exponentially and fisheries around the world are largely in decline, with increasing numbers of species being overexploited and populations crashing or becoming unsustainable.

The WWF Nedbank Green Trust has been highly proactive about funding a range of projects to conserve and legally protect our oceans. As a country, we need to intensify this, with far more support from the South African authorities as time is not on our side. We welcome the United Nations Decade of Ocean Science for Sustainable Development (2021–2030), which will support efforts to address the cycle of decline in ocean health by bringing together ocean stakeholders worldwide.

The causes of ocean and marine species include human population growth, illegal unreported and unregulated (IUU) fishing, fisheries organised crime, pollution, climate change, and the reliance on fish and seafood as a protein source and livelihood for coastal communities. The oceans are further being targeted for gas and oil, marine phosphate and a range of other minerals, which is putting the marine environment under increased pressure.

IUU fishing and fisheries organised crime is a massive issue that is destroying marine living species, including our perlemoen/abalone and West Coast rock lobster but also many other species. This has accelerated in the last decade as organised crime syndicates have seen a gap in South Africa as a result of inadequate law enforcement and governance of our oceans.

Another issue is the increase in the transportation of goods by ships all over the world, which results in the unintended consequence of marine species being transported across the globe where they take hold in other countries and become invasive, displacing the native species.

Amplifying all the concerns is the impact of climate change. Our oceans are heating up and less able to retain oxygen, which is vital for our planet. The oceans are a carbon sink, absorbing vast amounts of carbon dioxide, but with the current rate of absorption, the oceans are turning more acidic, with profound consequences for marine life.

It is critical that we build in mitigation and adaption measures to better conserve our oceans and aim for sustainable fisheries going forward. Marine protected areas (MPAs) are part of the solution to build resilience in marine ecosystems. The WWF Nedbank Green Trust has provided catalytic funding for MPA projects over many years.

From 26 MPAs there are now 42, covering 5,4% of SA's exclusive economic zone (EEZ). South Africa's commitment is 10% in terms of the Convention of Biological Diversity of which we are a signatory. In August 2020 the WWF Nedbank Green Trust approved funding for the South African MPA network project (SAMPAN) to take MPA expansion another step forward with the associated management authorities to work towards the 10% target, covering South Africa's 150 marine ecosystems.

SAMPAN will focus on more effective management of the MPAs, a key focus being co-management with the adjacent communities to ensure that they benefit. Managing MPAs, like managing fisheries, is all about managing people – it is critical if we want to conserve our oceans.

2007 – 2014
SeaChange

'South Africa has exceptional marine biodiversity, with approximately 2 200 fish species and at least 11 000 species of invertebrates and plants. An estimated 33% of these species are found only in South Africa and our knowledge of the vast majority is hopelessly inadequate.'
– Dr Kerry Sink

The SeaChange Project conducted South Africa's first comprehensive National Marine and Coastal Biodiversity Assessment. Led by SANBI's Marine Programme Manager, Dr Kerry Sink, the team mapped 136 coastal and marine habitats for the first time, and assessed their ecosystem threat status. It drew on over 500 scientific publications, research, expertise, projects and maps.

'This assessment is essential to inform policies and priority actions for threatened ecosystems (46% of our coastal and marine habitats are threatened) and the more than 500 species caught in South Africa's oceans,' says Sink.

'Priority actions and policies need to be put in place for ecologically and biologically significant areas that are sensitive to activities such as trawling and mining,' continues Sink.

The National Marine and Coastal Biodiversity Assessment examines other impacting elements such as climate change and alien and invasive species.

'Beaches, dunes, estuaries, mangroves, kelp forests … all need to be maintained in an ecologically functioning state in order to buffer the coastline from extreme events, such as large waves and coastal erosion linked to changes in wind strength and increased storms.

'Healthy, functioning estuaries need to be open to reduce the risk of flooding. When they silt up or they don't flush quickly enough, it can cause back flooding, which can have a severe impact on human settlements. Estuaries are dynamic hubs of conservation importance because they link land, sea and freshwater, and serve as an important nursery area for many offshore species.'

South Africa's first Reef Atlas

Scuba divers, citizen scientists and underwater photographers were the backbone of South Africa's first Reef Atlas. They provided thousands of GPS points, videos and photographs to help map all the reef systems in South Africa's oceans.

The Reef Atlas includes 390 mapped reef systems, several of which have been identified for the first time. It has 1300 photos with corresponding GPS co-ordinates, and new information is added as it becomes available. Led by Dr Kerry Sink and SANBI Marine Biodiversity Research and Policy Practitioner, Prideel Majiedt, it is included in the National Marine and Coastal Biodiversity Assessment.

Apart from a few reef types in KwaZulu-Natal, most of South Africa's reefs are not well protected. 'Several fish species, such as the red stumpnose and red steenbras, are very closely associated with reef systems. These species need to be 20 to 30 years old before they get to a good size. The vulnerability of these and many other slow-growing species speaks for itself,' explains Majiedt, who travelled South Africa's coastline to recruit citizen scientists, organisations and industries with a stake or interest in the ocean to participate in mapping the reefs.

Two citizen scientists who went out of their way to assist the Reef Atlas are Peter Southwood and Georgina Jones, both of the Southern Underwater Research Group. 'Peter submitted the most dive positions and the most images, and he mapped some of the reefs himself, using his own innovative methods,' says Majiedt, adding that the Reef Atlas demonstrates the power of public participation in science and how citizens can build the knowledge base for improved biodiversity management.

Dr Kerry Sink awarded Living Planet Award

Dr Kerry Sink was honoured with the WWF Living Planet Award 2017 for her contribution to decisive government planning, policy and management in the marine environment. Winners are selected for their catalytic contributions to environmental conservation.

2006
Aliwal Shoal for all

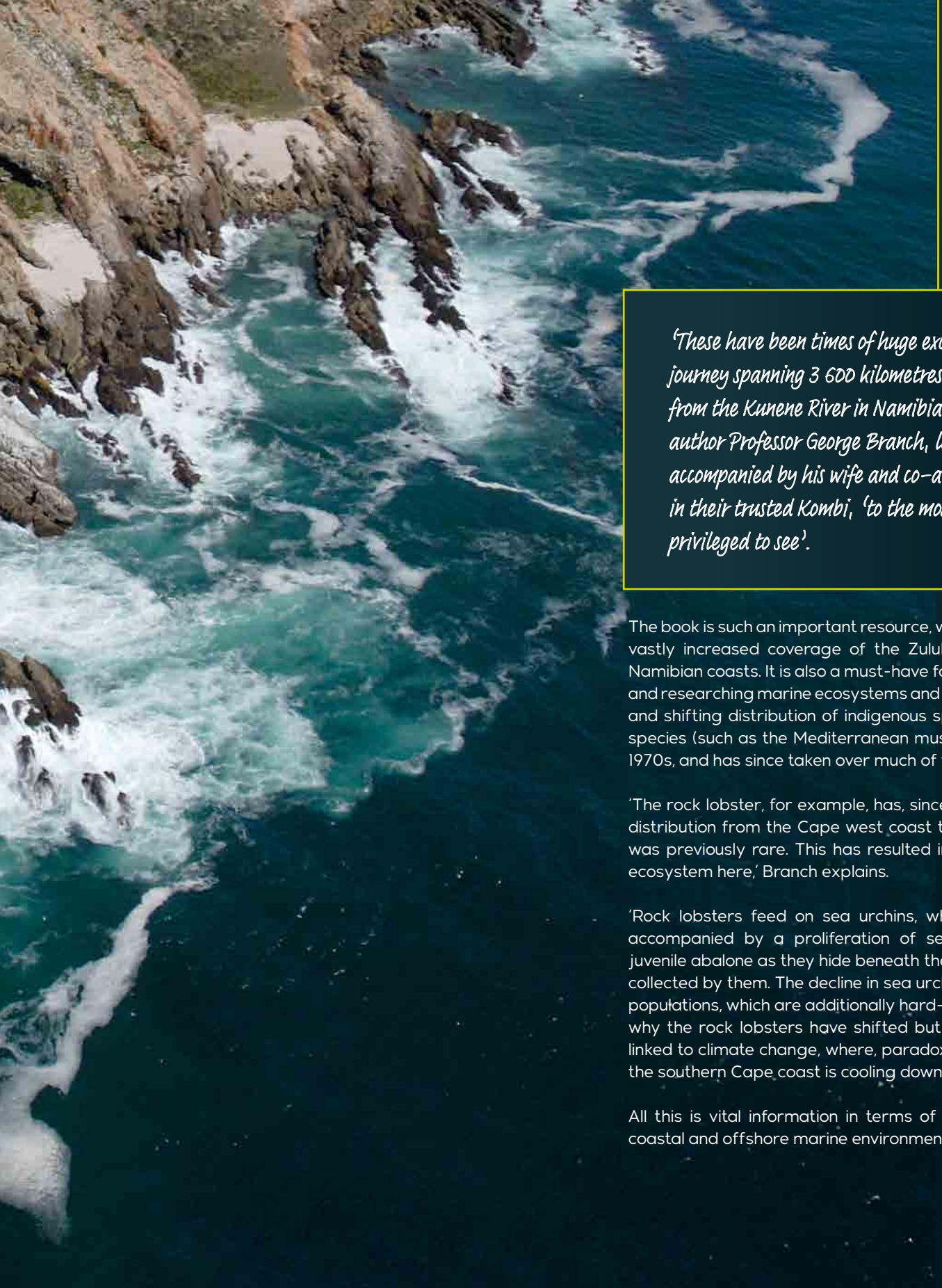
Aliwal Shoal – an offshore reef south of Durban – is one of the world's top dive sites and became a marine protected area in 2004. The reef supports spectacular coral species, endemic East African reef fish, tiger sharks, bottlenose dolphins, humpback whales, manta rays, sea turtles and ragged-tooth sharks – Aliwal Shoal's flagship species.

With about 40 000 dives a year taking place at Aliwal Shoal, the reef needs to be carefully managed and conserved. As a demonstration of the WWF Nedbank Green Trust's commitment to this, in 2006 it funded the Aliwal Shoal Dive Guide, a key reference work for recreational divers. Written by Dr Jenifer Goldberg, who has worked extensively as a dive master at Aliwal Shoal, the guide offers invaluable input from leading marine experts, spectacular photographs and a map of the reef, put together by a team of seasoned divers.

2009
Two oceans: one earth

If you appreciate that we have one earth and that our place on it at the tip of Africa is encompassed by two unique oceans with extraordinary biodiversity that needs to be protected, then this book is for you.

Sponsored by the WWF Nedbank Green Trust, Two oceans: a field guide to marine life in southern Africa, co-authored by Professor George Branch, Margo Branch, Professor Charles Griffiths and Dr Lynnath Beckley, is a life work, filled with unique photographs and research gathered over more than two decades. It is the updated version of the version that first came out in 1994.



'These have been times of huge excitement at what we found on our journey spanning 3 600 kilometres of southern Africa's coastline, from the Kunene River in Namibia to southern Mozambique', says author Professor George Branch, legendary marine man, who was accompanied by his wife and co-author, Margo Branch, journeying in their trusted Kombi, 'to the most amazing places we have been privileged to see'.

The book is such an important resource, with new finds and additions, including vastly increased coverage of the Zululand/Maputaland, Mozambique and Namibian coasts. It is also a must-have for other projects that are monitoring and researching marine ecosystems and biodiversity, including the distribution and shifting distribution of indigenous species and the identification of alien species (such as the Mediterranean mussel, which first appeared in the late 1970s, and has since taken over much of the West Coast).

'The rock lobster, for example, has, since the late 1980s, shifted its centre of distribution from the Cape west coast to the southern Cape coast where it was previously rare. This has resulted in a complete transformation of the ecosystem here,' Branch explains.

'Rock lobsters feed on sea urchins, which has led to the latter's decline, accompanied by a proliferation of seaweed species and a collapse of juvenile abalone as they hide beneath the urchins, and feed on the drift algae collected by them. The decline in sea urchins has been a whammy to abalone populations, which are additionally hard-hit by poaching.' 'We cannot confirm why the rock lobsters have shifted but the working hypothesis is that it is linked to climate change, where, paradoxically in the light of global warming, the southern Cape coast is cooling down,' Branch elaborates.

All this is vital information in terms of the management of South Africa's coastal and offshore marine environment.

2012 - 2014
Shaping the future of ocean management in South Africa

If you travel the 65 kilometres from Gordon's Bay to Bot River in the Western Cape, you will experience a ruggedly beautiful coastline that is a key breeding ground for many of South Africa's endangered linefish, abalone and the West Coast rock lobster. This stretch also includes Stony Point, home to one of only two South African mainland colonies of the endangered African penguin,

It is here that the WWF Nedbank Green Trust is helping to finance marine conservation as part of the Kogelberg Coast Integrated Management Plan (KCIMP). Drawn up by the WWF C.A.P.E. Marine Parks Programme the plan hopes to help shape the future of ocean management in South Africa, says WWF-SA's Peter Chadwick.

'By integrating the local communities, terrestrial, coastal and marine environments into one unit within the Kogelberg Biosphere we believe we will be able to create resilient ecosystems with positive economic and social benefits,' Chadwick explains. Many of these communities rely on the sea for their livelihoods, with approximately 300 small-scale fishers living and fishing in the area.

The study area extends from the Steenbras Estuary within False Bay through to the Bot River between Kleinmond and Hermanus. This area covers 65 kilometres of coastline and potentially extends 12 nautical miles (about 20 kilometres) out to sea. Within the KCIMP, the goal is for 20% of the marine resources to be a no-take zone and 80% assigned to improved resource management, with preferential access for local small-scale fishers who compete for resources with all those who travel to the area to catch, legally and illegally. 'This puts pressure on what the local fishers can take out, and it needs to be addressed in terms of sustainable fisheries practice and the Small-scale Fisheries Policy,' says Chadwick. Many of the catch species are overexploited and down to 2–3% of their original populations, including perlemoen/abalone, red steenbras and West Coast rock lobster.

'Although the focus of the KCIMP is on the marine environment, we are working with a range of partners to ensure a healthy functioning of the whole area, including the local estuaries and catchment areas,' says Chadwick, who explains that an integrated approach is necessary to avoid knock-on effects. 'For example, if you don't manage water catchments properly – including alien plant control, fire management and controlling agricultural water use – it has a huge negative impact on downstream water resources, with the result that estuaries do not function properly and this, in turn, directly impacts the linefish nursery areas.

Another project in the region is BRUV (baited remote underwater video), which is part of a long-term WWF-SA project in partnership with the Kogelberg small-scale fishers. The BRUV cameras record images of the marine life inside and outside of the marine protected area (MPA) on the Kogelberg Coast around Betty's Bay and Kleinmond.

'The BRUV project was initiated in collaboration with Mike Markovina, co-founder of the ocean research, conservation and documentary group, MovingSushi, and the footage is incredible: we have images of sharks, fish species, rock lobster, octopus … it gives us such a good idea as to how the key linefish and lobster stocks are looking inside and outside the MPAs,' says John Duncan, Senior Manager of WWF-SA's Marine Programme.

Catching snoek Photo: Mark Chipps

2012
Where people of the sea meet marine protected areas

In their small, brightly painted boats the fishermen head out to sea. On some days they return with a haul of fresh linefish for their families and some extra to sell. On other days they return empty-handed.

They rank among the thousands of small-scale fishers along South Africa's coastline who work exceptionally hard for their living, and who have been practising traditional fishing and harvesting methods for generations. Which is why, when some of them were told several years back that they could not continue because their area had been proclaimed a marine protected area (MPA), they understandably felt that marine conservation and legislation were against them, and many defied the proclamation, effectively becoming poachers.

This created a deadlock between marine conservation and certain coastal communities because the small-scale fishers need fish and seafood for survival while South Africa needs MPAs (which are the breeding grounds for many marine species of national importance) to ensure a sustainable supply of fish and seafood into the future.

Towards resolving this situation, the WWF Nedbank Green Trust financed The Human Dimensions Project led by WWF's Integrated Ocean Management Programme Manager, Peter Chadwick, to understand the full implications of MPAs on these fishing communities, with the hope of finding sustainable solutions for all parties.

In the Dwesa-Cwebe MPA, for example, the small-scale fishers explained that they were never consulted about the proclamation of the MPA, which took away their livelihood. At the same time this MPA is critically important from a national conservation perspective because it is the spawning ground for species like kob (kabeljou) and white steenbras, which are under serious threat. Kob is down to approximately 4% of its original population.

University of Cape Town fisheries researcher, Dr Serge Raemaekers offers the example of a woman in a coastal community who is head of her household and who harvests mussels, limpets and redbait to feed her family.

'Unquestionably, she will risk getting caught in the MPA, because for her it is about survival. These are the forgotten people who don't partake in high-level biodiversity conversations, and the inclusion of their needs is essential in the spatial planning of MPAs.'

'It is very clear that if we want to solve the conflict around MPAs, such as poaching, we need to implement practical management policies that include the community, for instance allowing preferential access and community management of sanctuary areas.'
– Dr Serge Raemaekers.

Customary fishing rights

In 2018, fisherman David Gongqose and two other fishermen from Dwesa-Cwebe in the Eastern Cape asked the Supreme Court of Appeal (SCA) to find unlawful the 2000 declaration of the Dwesa-Cwebe Marine Protected Area (MPA) along their coastline without consultation or consideration of their customary fishing rights. This was after they had been arrested and charged with, amongst other things, attempting to fish illegally inside an MPA. In a landmark case the SCA upheld their customary fishing rights in the Dwesa-Cwebe MPA.

2016
FishforLife – fish for South Africa

Nobody is better at managing fish stocks than those who actually catch fish. This is what it says in CatchReport, launched in October 2016, where recreational anglers voluntarily contribute to conserving South Africa's fish stocks and oceans by adding and sharing their catch data. CatchReport is housed on the mobile-friendly FishforLife website (www.fishforlife.co.za).

This is such an innovative approach to marine conservation, considering that there are approximately 2,5 million active recreational anglers in South Africa. The definition of recreational angling ranges from catching fish for supper from the shore to catching off ski boats or with spear guns.

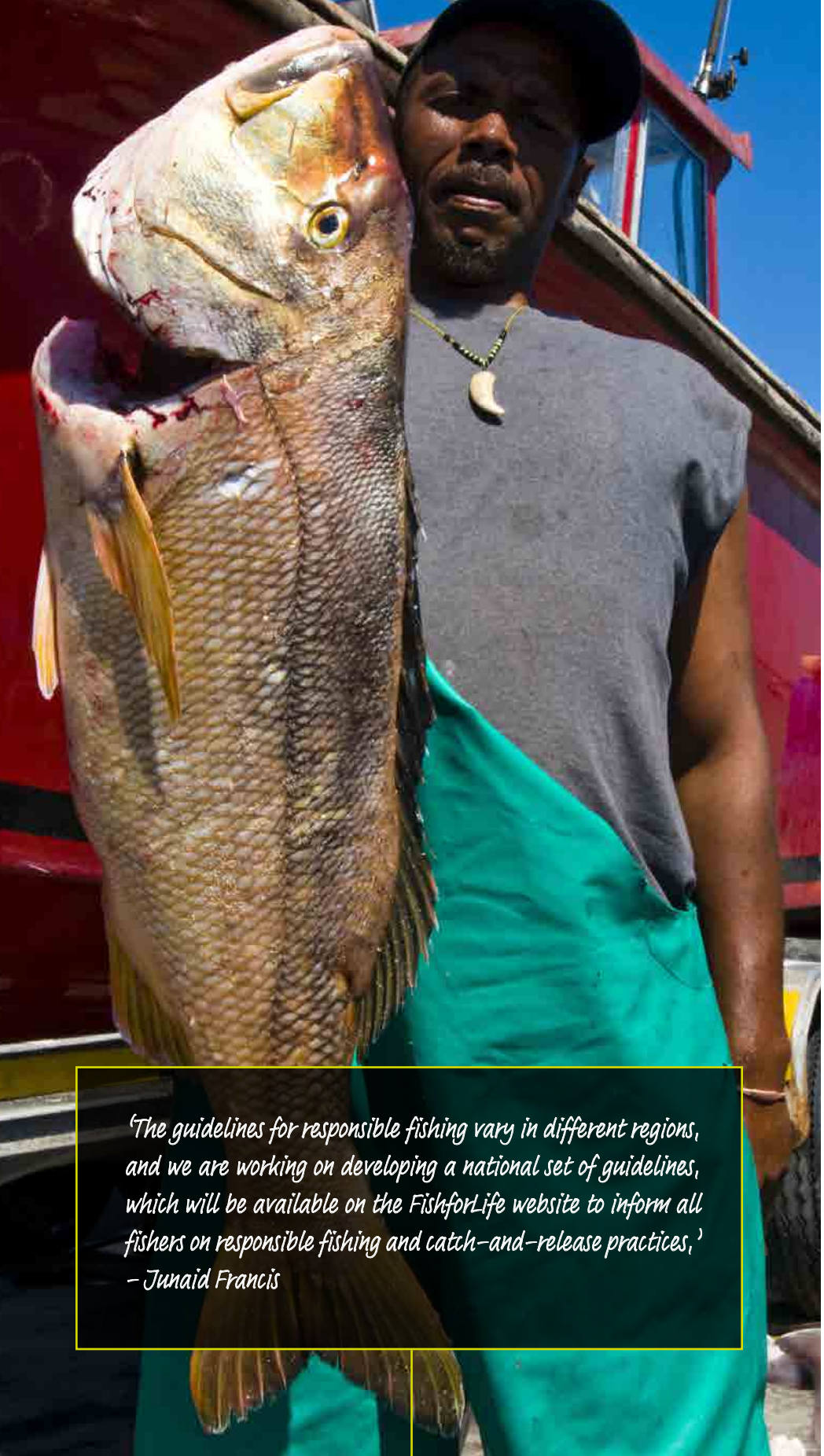
'It is an easy-to-use, accessible website, which disseminates current information on fish and marine species conservation status, angling good practice, interesting conservation information and marine news,' says South African National Biodiversity Institute (SANBI) Marine Programme Manager, Kerry Sink, who conceptualised the FishforLife platform.

Developed as a collaboration between SANBI, WWF-SA, and research institutions at the University of Cape Town and Rhodes University, FishforLife is funded by the WWF Nedbank Green Trust.

'The project will contribute significantly to FishforLife's goal of collecting a wealth of information from marine and estuarine fishers across the country, and of contributing to ecosystem health and appropriate management of linefish resources,' says the project coordinator, Rose Thornycroft, a marine biodiversity researcher with SANBI and a keen recreational angler.

'While the Department of Agriculture, Forestry and Fisheries monitors the catches of the 22 commercial fisheries in South Africa, there is no official monitoring of the catches in recreational angling, other than the number of permits sold and various surveys with fishers along our large coastline,' says Chris Kastern, Programme Manager: Seafood Market Transformation, WWF-SA.

Red steenbras Photo: Peter Chadwick



'The guidelines for responsible fishing vary in different regions, and we are working on developing a national set of guidelines, which will be available on the FishforLife website to inform all fishers on responsible fishing and catch-and-release practices.'
– Junaid Francis

''Many recreational anglers have strong conservation ethics, and they practise ethical catch-and-release of threatened trophy fishes, such as red steenbras and dageraad. The angling clubs, regionally and nationally, also generate invaluable data through their members and competitions,' adds Junaid Francis, WWF-SA's Seafood Industry Liaison Officer.

'Every time anglers go out, they generate extremely useful species data, but until now the vast majority of this information has been lost. Also, while some spectacular angling results are reported in the media or captured in photographs, these are often not available as scientific data,' adds Associate Professor Colin Attwood of the Marine Research Institute at the University of Cape Town. Citizens who enjoy the ocean, such as divers, are also an important source of useful data as they are able to provide the location as well as current and historical images of fish species, which inform distribution and catch trends over time.

There are three subprojects housed on the FishforLife website, to which everyone can contribute, namely CatchReport, Fishtory and the Sea Fish Atlas.

- CatchReport: Apart from capturing data from fishing competitions, CatchReport allows individual anglers to log their social fishing catches. CatchReport also allows recreational fishers to access their stored catch data and view their previous fishing activities, acting like an online logbook.
- Fishtory: Members of the public are encouraged to provide their historical fishing photos and angler diaries. This information, when combined with catch records from magazine and newspaper articles, can be used to develop an historical database of measurements such as typical catch size and distribution. Fishtory provides unique insights into the past that will help secure the future of our fish.
- Sea Fish Atlas: This project was launched in 2014 with WWF Nedbank Green Trust seed funding. Knowing how fish distributions vary along our coast is essential to assess and manage fish stocks. With the help of citizen scientists around the country, including recreational fishers and divers, the Sea Fish Atlas helps produce accurate distribution maps and an image database of South African fish.

2017 – 2020
Oceans for the future – join us in turning the tide

An estimated eight million tons of plastic are dumped into the world's oceans every year. An estimated five trillion pieces of plastic are afloat on the oceans at this moment. Plastic waste is in every area of the oceans – from the surface to the deepest, most remote parts, accounting for 80% of all waste in the oceans.

Nedbank, together with the V&A Waterfront, the Volvo Ocean Race, and the United Nations Environment Programme, delivered a strong message about the need to protect our oceans at the Ocean Summit in Cape Town in December 2017.

The Ocean Summit brings together citizens, scientists, sailors, researchers, fishers, governments, businesses, conservation organisations, the media, tourism drivers and thought leaders who are working on solutions to overcome the global crisis of ocean plastics.

'The summit highlighted both the scale of the plastic pollution that our oceans are facing and the encouraging range of innovative solutions that have been proposed to deal with it,' says John Duncan, Senior Manager of the WWF-SA Marine Programme. 'The summit also showed that the solutions to the problem lie upstream of the ocean, with producers, retailers and consumers who must rethink their relationship with plastic.'

To address this at a number of levels, the WWF Nedbank Green Trust launched a major three-year Marine Plastic Pollution Programme in July 2018. The programme involves clients, industries, retailers and the government to work towards urgently implementing practical approaches and policies to address the marine and environmental plastic problem collectively throughout its life cycle – from production and consumption to waste management.

Lorren de Kock, WWF-SA's Project Manager: Circular Plastics Economy, is overseeing this programme for the WWF Nedbank Green Trust. 'There is an economic opportunity to start thinking differently about plastics, in line with circular economic models in which companies design plastics that can be reused, shared, repurposed and recycled,' says de Kock. 'Solutions are emerging from all corners and the trend is gathering momentum throughout society.'

'The aim of the South African Plastics Pact is to work together at an organisational and national level to develop the best way forward to manage the plastic waste and pollution problem and be part of the drive toward a circular plastic economy that will unlock new business and job creation opportunities.'
– Lorren de Kock

Beyond the Horizon

The WWF Nedbank Green Trust is currently supporting 'Beyond the Horizon', a collaboration between WWF-SA, the Beach Co-op, the Green House and other organisations, to better understand how consumers and retailers can play a part in keeping plastic out of the ocean. 'What we're seeing is that people are increasingly aware of the problem and want to be part of the solution; the challenge is to provide them with practical pathways. Being part of the change can be as simple as declining a drinking straw or switching to reusable shopping bags,' says John Duncan.

First African country to join Plastics Pact network

On 30 January 2020, South Africa became the first country in Africa to sign up to the Ellen MacArthur Foundation's Plastics Pact, joining the United Kingdom, Chile, France, Portugal and the Netherlands. WWF-SA has led the development of the South African Plastics Pact, as well as the South African Plastics Recycling Organisation and the Waste and Resources Action Programme.

Funding for the initial development was provided by the WWF Nedbank Green Trust, while the implementation phase which started in late 2019 was funded by the UN Strategic Learning Exchange.

'Our approach is that addressing plastic waste and pollution is a global imperative and it is everyone's problem,' says De Kock. 'It is not going to go away by itself; we have reached a point where the Earth simply does not have the capacity to renew itself anymore and this necessitates major interventions.'

'In South Africa, where we have more ocean territory than land, we often take for granted the many services our oceans supply. Most essentially – and often forgotten – they provide 70% of our oxygen and absorb the majority of our carbon dioxide. Two invaluable services we could not do without.'
– John Duncan, Senior Manager for WWF-SA's Marine Programme.

2018 - 2021
SA's first boat-based whale-watching study

Bottlenose and common dolphins, the endangered Indian Ocean humpback dolphin, southern right, humpback and Bryde's whales, South Africa has them all, and people come from all over the world to experience them up-close in our oceans. Over the past two decades this has developed into an important, growing tourist industry, with new and established operators in marine tourism hotspots such as False Bay, Hermanus, Gansbaai, Knysna, Plettenberg Bay and Port Elizabeth.

In partnership with the Nature's Valley Trust, a WWF Nedbank Green Trust project is the first to assess the impact of South Africa's boat-based whale-watching industry on the dolphins and whales, as well as the socio-economic impact of the industry on the towns where the operators are based.

'Using Plettenberg Bay for our case study, we are looking at the key areas the dolphins and whales use in the bay; where they rest, feed and socialise and where the whale-watching boats intrude in these areas,' explains the project leader Dr Gwenith Penry. 'If there are too many operators in one area, the animals could leave. We therefore need to determine what type of approach and encounter leaves the animals undisturbed and to have these implemented as permit restrictions.'

It's all part of the greater marine conservation effort, as dolphins and whales are not only important in their own right as key players in marine tourism, but also as key indicator species for overall ocean health because they are at the top of the marine food chain.

To observe how the dolphins and whales use the bay when undisturbed, Penry's team used a land-based theodolite – a land surveying tool with a powerful zoom, providing vertical and horizontal angles that are converted into GPS coordinates – to track animals through time and space. By observing the animals' undisturbed behaviour, the project team can assess how this changes when they are approached by boats.

Operators are required to keep a 50-metre distance from whales and humpback dolphins, and 25 metres from common and bottlenose dolphins, and remain with them for no longer than 20 minutes. Cetaceans (whales and dolphins) are curious creatures and may initiate closer contact with vessels, which is a special and exhilarating experience – but it is important to ensure that the animals control these interactions and not the operator.

'We're often asked whether these restrictions are applied when swimming with whales and dolphins, but in South Africa this practice is illegal, both for the safety of the humans and the animals,' Penry explains. 'People think dolphins are smiley, friendly animals because this is how they are portrayed in captivity, but they are powerful, wild, top marine predators. If dolphins or whales bump you, they can do a lot of damage.'

On the socio-economic side, the team looked at the direct and indirect benefits of marine tourism activities for the communities and towns involved, for instance how the activities contribute to employment and hospitality businesses. 'Our research is truly transdisciplinary, as we collaborate with sociologists, economists and development specialists,' says Penry. 'Our research includes assessing how it would affect the economy of these towns if there were no whale-watching operators. Some of these towns don't have other industries and it's important to understand the contribution of marine tourism and to encourage local government to value and support it and play its part in ensuring the industry is ethical and well regulated.'

Southern right whale breaching Photo: Lloyd Edwards, Raggy Charters

2014 - 2018

No time to waste as companies target our oceans

What is the concern?

In 2012 and 2014, the Department of Mineral Resources (DMR) granted rights to three private companies to prospect for marine phosphate. three prospecting rights for marine phosphate over a considerable portion of South Africa's marine environment.

Together, these prospecting areas total approximately **150 000 km² or 10%** of our exclusive economic zone, extending from the northern reaches of the West Coast, down to Cape Town, around the Cape Peninsula and all the way to Mossel Bay.

Although a prospecting right does not provide a legal entitlement to a mining right, it provides an expectation that mining will be allowed. In addition to the granting of these rights, there are a number of other indications that our government plans to develop a bulk seabed mining industry in South Africa. The Department of International Relations and Cooperation (DIRCO) and DMR have announced the development of a Seabed Mining Roadmap aimed at developing the seabed mining industry.

South Africa has jurisdiction over an extensive marine environment, with an exclusive economic zone (EEZ) of approximately 1,5 million km^2. In South Africa's territorial waters and across the globe we are witnessing a rapid increase in marine mineral and petroleum extraction over vast areas of the ocean. In this context, local and international companies are testing marine laws. Alarmingly, the type of mining that would be undertaken to extract phosphate in South African waters is extremely destructive, with giant dredge vessels scooping up a three-metre layer from the seabed, destroying habitats and releasing hazardous substances, including radioactive materials, methane, heavy metals and hydrogen sulphide.

Opposing the granting of marine phosphate prospecting rights was part of 'Safeguard our Seabed' a three-year project, funded by the WWF Nedbank Green Trust and run by the Safeguard our Seabed Coalition, a group of organisations advocating for a cautious approach to seabed mining. 'These prospecting areas overlap with South Africa's major fishing grounds, critically endangered seabed and benthic ecosystems, and up to eight proposed marine protected areas,' says project leader, Saul Roux, a legal campaigner with the Centre for Environmental Rights (CER) in Cape Town.

'One of the project objectives was to pursue a moratorium on bulk marine sediment mining in South Africa. Government has not established a moratorium, but we think it is highly unlikely that companies will apply for a mining right for bulk marine sediment mining in future,' says Roux. It was thus a campaign milestone when, at the end of 2017, the director of two of the companies holding prospecting rights publicly announced that marine phosphate mining would not be financially feasible and discontinued prospecting.

Roux highlights the role that advocacy, research, information sharing and the strong pushback from civil society played in halting bulk marine sediment mining in South Africa. He adds that it is not only bulk marine sediment mining that is a concern: 'Currently, there is a proliferation of marine and coastal mining practices, such as coastal heavy sand mineral mining, new destructive forms of coastal diamond mining, coastal sand mining for construction sand, offshore fracking and offshore oil and gas activities.

'Fortunately, there is a growing civil society movement in South Africa that is concerned about the impacts of industrial-scale marine extraction on the marine environment and existing marine users, such as commercial and small-scale fishers, as well as on economically important coastal tourism. And the CER will continue to play our role in working towards better marine governance.'

'If seabed mining goes ahead in any of these jurisdictions, it will set a dangerous precedent, opening the door for highly destructive forms of marine mining in other places. Strong resistance from civil society in all these jurisdictions is important. It is thus imperative that we maintain strong opposition in South Africa against bulk marine sediment mining.'
— Saul Roux.

2020
SA's marine protected areas to increase

Many of our fishery resources in South Africa are overexploited or collapsed, or the stock status is simply unknown. It is critical that we build in mitigation and adaption measures to better conserve our oceans and aim for sustainable fisheries going forward. Part of the solution is marine protected areas (MPAs).

South Africa currently has 42 marine protected areas, covering 5,4% of our exclusive economic zone (EEZ). South Africa's commitment is 10% in terms of the Convention of Biological Diversity of which we are a signatory.

'MPAs support fisheries sustainability by providing safe spaces in which fish can breed undisturbed, and young fish can mature into adulthood,' explains Dr Kerry Sink, Head of the Marine Unit at the South African National Biodiversity Institute (SANBI). MPAs also serve to maintain healthy ecosystems and will serve as a refuge for marine resources as climate change becomes more severe.'

In August 2020 the WWF Nedbank Green Trust, which has provided catalytic funding for MPAs over many years, approved a new round of funding for the South African MPA network project (SAMPAN).

'Together with the associated management authorities, notably SANBI and the Department of the Environment, Forestry and Fisheries (DEFF), we are taking MPA expansion another step forward to work towards the 10% target; this will cover South Africa's 150 marine ecosystems and ecologically and biologically significant areas,' says WWF-SA Senior Manager: Marine Programme, Craig Smith.

While MPA expansion is a necessity, it is often not well received by various user groups, as there is a major interest in extracting the marine resources from these areas, sometimes illegally. A key part of SAMPAN is capacitation of management authorities with training for MPA staff, including species identification, legislation and enforcement to improve the effectiveness of MPAs.

'We need to know what our MPAs are protecting and to understand how they will be affected by species migration due to changes in ocean temperatures and acidity levels increasing as a result of climate change,' explains WWF-SA Senior Manager: Marine Programme, Craig Smith. 'A number of species have already changed their distribution patterns, including anchovy and sardine, which are the target species of South Africa's largest fishery. These have traditionally been fished along the west coast, but the bulk has shifted east of Cape Agulhas. This has additional huge socio-economic implications for the anchovy- and sardine-processing factories and employees on the West Coast.'

An important part of SAMPAN is to ensure that the fishing communities are on board for the MPA expansion, participating in their management and deriving benefits. Benefits can include ecotourism activities inside the MPAs, such as boat-based whale watching and diving, and businesses such as aquaponics and aqua ranching.

Adjacent to the Betty's Bay MPA there is a restaurant owned and run by the community at Stony Point. This MPA is a restricted or no-take zone but the local fishers can operate on either side of the MPA and supply the restaurant. MPAs vary from no-take to controlled harvesting with a permit, to a combination of both. An example of this is the Table Mountain National Park MPA, which has six no-take areas within the MPA of approximately 1 000 km^2 with the remainder of the MPA zoned as a controlled area.

If fishing communities are to develop a sense of ownership in the MPAs, they must see the benefits the MPAs can provide. Otherwise poaching syndicates will continue to exploit these communities, using them to supply the illegal seafood trade.

It is extremely difficult to control poaching without community stewardship and ownership of the oceans, as government does not have sufficient capacity. Regrettably, government has not looked after the small-scale fishers and the small-scale fisheries policy is yet to be fully implemented.

To enable fishers to electronically record their catches, the Abalobi app has been developed in partnership with WWF-SA. The platform also includes apps whereby the fishers can communicate with local restaurants, retailers and consumers so that they can sell their catch directly to them. They can also record their earnings and expenses. Abalobi has been piloted in Port Nolloth, Lamberts Bay, Struisbaai and Kleinmond and is growing in popularity with the fishers.

Smith explains that Cape bream, for example, was typically sold at R20 for five fish. Using Abalobi and selling direct, they can now get around R60/kg. A group of fishers now also have a vested interested in a processing plant in Cape Town.

'These catalytic projects and innovative applications have multiple benefits: they enhance the monitoring of marine life, they help scientists and government to better quantify and conserve marine life, and they include communities in ocean stewardship,' says Smith.

SAMPAN will partner with the recently created West Indian Ocean Protected Areas Network so that all the countries involved, including the coastal states up the east coast of Africa and the Indian Ocean island states, can benefit from the network's shared research and resources. Smith says: 'We need to significantly increase awareness throughout the region of the importance of the oceans and the urgency to protect them, because without the oceans there won't be life on Earth.'

'The small-scale fishers have been given a raw deal and waited a long time for redress, which has still not happened,' says Smith. 'During this long wait resources have further declined. They need to be included in the value chain, such as in the processing and marketing of fish and seafood, in addition to getting better prices for their catches.'

Fisherman Dirk Andries, Kogelberg Photo: Michael Markovina

FRESHWATER

Dr David Lindley
WWF-SA's Acting Senior Manager: Freshwater

It is interesting to look back to 1990, as the National Water Act had been passed three years earlier, in 1987. It was revolutionary because, for the first time ever, freshwater ecosystems, including rivers, lakes, estuaries, wetlands and groundwater, had a legal right to freshwater, called the Reserve.

Freshwater ecosystems are differentiated from marine systems. South Africa has 22 strategic water source areas, 223 types of river ecosystems and 792 types of wetland ecosystems.

Prior to the 1987 Water Act, freshwater in a catchment was allocated for various uses, such as for agriculture, industry and domestic use, whereas this Act made it law for freshwater ecosystems to retain enough to keep them healthy and functioning. Led by then Minister of Water Affairs, Kader Asmal, South Africa drew on the best expertise from around the world to develop the Water Act, and, with a new government in place, the country was set to bring about world-first water reforms. Many countries around the world began to adapt their water legislation to include some of the innovative concepts South Africa had developed.

That's the good story, but from the late 1990s it went downhill as the country was simply not implementing the new Act. The catchment management agencies were not set up as they were supposed to be; in certain catchments there was not enough freshwater to meet the Reserve as 'take all' licences had already been allocated to agriculture and industry, and the water allocation reforms were not being applied.

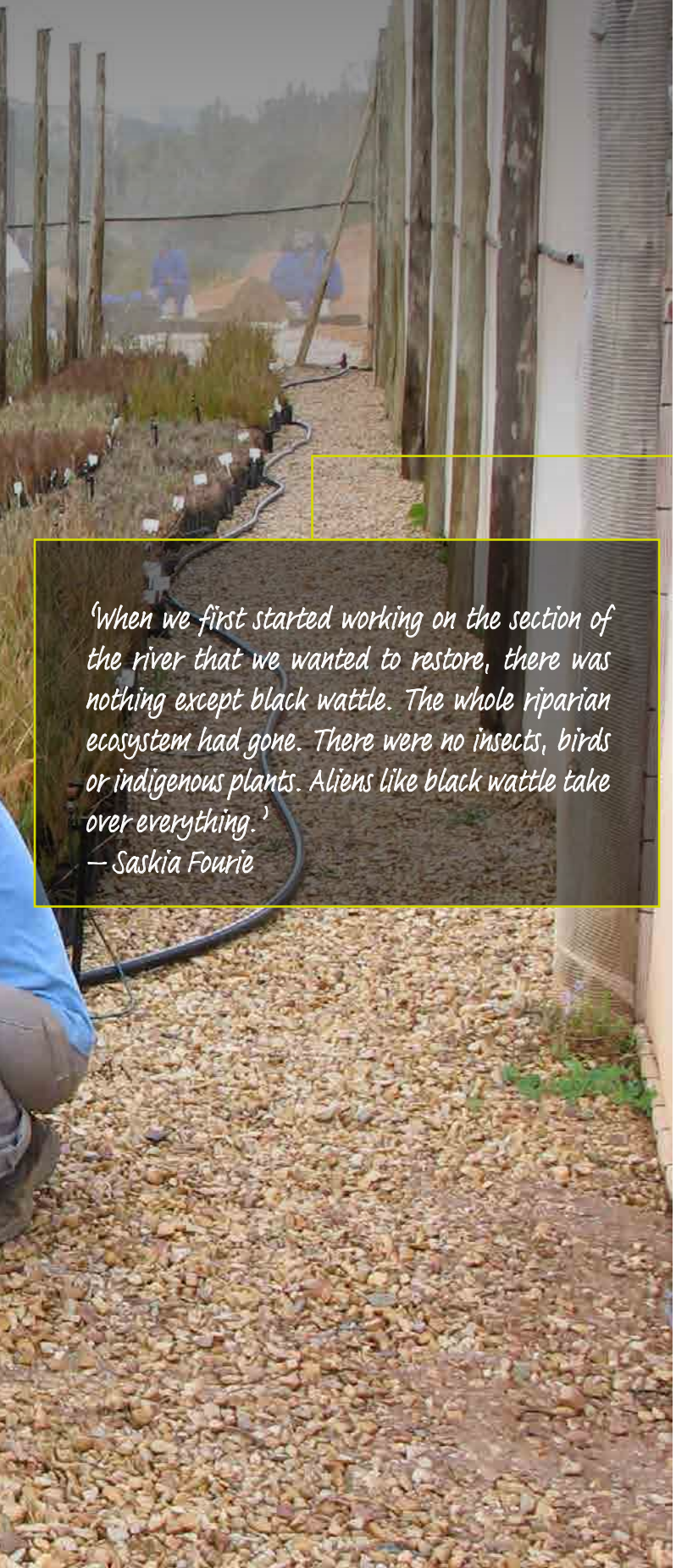
At this point it became increasingly important for conservation organisations and NGOs to fly the flag of the environment's right to freshwater and to motivate for improved catchment and freshwater conservation and governance, not only with government, but also with farmers, landowners, communities and business.

Thirty years later, in our increasingly water-stressed country, all of us have to play a role in freshwater conservation. Nationally, we have to ensure that our strategic water source areas, which only cover 10% of South Africa's land area yet provide 50% of our country's freshwater, are integrated into law and governed responsibly. The WWF Nedbank Green Trust has been working on this for some time, in partnership with government, business, communities and other conservation organisations. The Trust has also been supporting improved water governance, water resource management and water stewardship at all levels through several projects over the years.

A critical aspect of these projects is to work on increasing our understanding of the social processes that bring people together to activate environmental change collectively. People do not respond well to being told what to do; the solution lies in bringing everyone together with their respective and differing viewpoints and working towards one combined goal with collective benefit and commitment to the greater good of our shared freshwater resources. Creating a common understanding of the challenges, co-creating solutions, and working together to implement them is the only way to catalyse social change, and we are proud of the range of catalytic projects the WWF Nedbank Green Trust has pioneered.

2008 - 2011
The enormity of catchment restoration

Horticulturist Victoria Wilman cultivating indigenous riparian species that were then planted out in the project's pilot area



'When we first started working on the section of the river that we wanted to restore, there was nothing except black wattle. The whole riparian ecosystem had gone. There were no insects, birds or indigenous plants. Aliens like black wattle take over everything.'
– Saskia Fourie

Riparian ecosystems (streams, rivers and river banks) are particularly prone to invasion by woody alien species like black wattle. Natural recovery after alien invasive species have been felled is often limited, and indigenous vegetation does not re-establish without intervention.

How the alien vegetation is cleared is, therefore, critically important. This came to light during a WWF Nedbank Green Trust project that set out to tackle the enormous task of alien clearing and restoration along South Africa's river systems.

Collaborating with Working for Water, Working for Wetlands and Working on Fire, the project team completed a pilot riparian restoration project along several kilometres of two remote tributaries of the Kouga River in the Eastern Cape. This scale of riparian restoration had never been done before.

'Our aim was to pioneer methods that can be used throughout the country to restore the indigenous vegetation after alien clearing,' says project leader, Saskia Fourie.

'Although it is necessary to use herbicides as part of the clearing process, they can also be really damaging if used incorrectly, as they can cause indigenous plant die-offs,' says Fourie. 'The same applies to fire; it can be a very valuable management tool but it can also cause severe damage. In the project area the clearing fires burnt so hot because of the black wattle that they destroyed the indigenous vegetation seed bank and sterilised the soil. With natural vegetation you wouldn't get fires of this intensity.'

During 2008 Fourie and her team replanted and reseeded the project's pilot area of 20 hectares with over 35 species of indigenous plants, harvested from adjacent catchments. These were propagated in a nursery at the Kouga Dam near Patensie, which is managed through the Eastern Cape Restoration Programme and supervised by horticulturist, Victoria Wilman.

Langkloof valley resident, Justice Ngcengane, was employed as a rehabilitation contractor with Working for Water and did most of the harvesting of plant stocks and seeds, a highly specialised process. Different species need to be planted throughout the riparian transition zones: the channel, wet bank, dry bank and slopes. Dudu Khena, a graduate intern employed by WWF, assisted Ngcengane and Fourie. 'It required quite a bit of trial and error to determine which of the indigenous species replanted best. Most of the Asteraceae species did well, as did the sedges, pelargoniums and some of the grasses, notably Miscanthus.

It is easy to harvest propagation material from these species; they are hardy, handle disturbance in the transportation process and they form a ground cover quite quickly,' says Fourie. 'It's been an amazing project and it is very rewarding to know that the outcome of the Kouga project can inform clearing and restoration projects throughout our country's river systems.'

2009-2012
Water power through people empowerment

'My training as a civil engineer has prepared me for draining wetlands so that farms can be developed, or roads can be built. At the Department of Agriculture I design drainage systems in agricultural areas. However, during the WWF Nedbank Green Trust course you taught me that wetlands need to be protected.'– Qcibisa Mangcu-Qotyiwe, civil engineer, Department of Agriculture

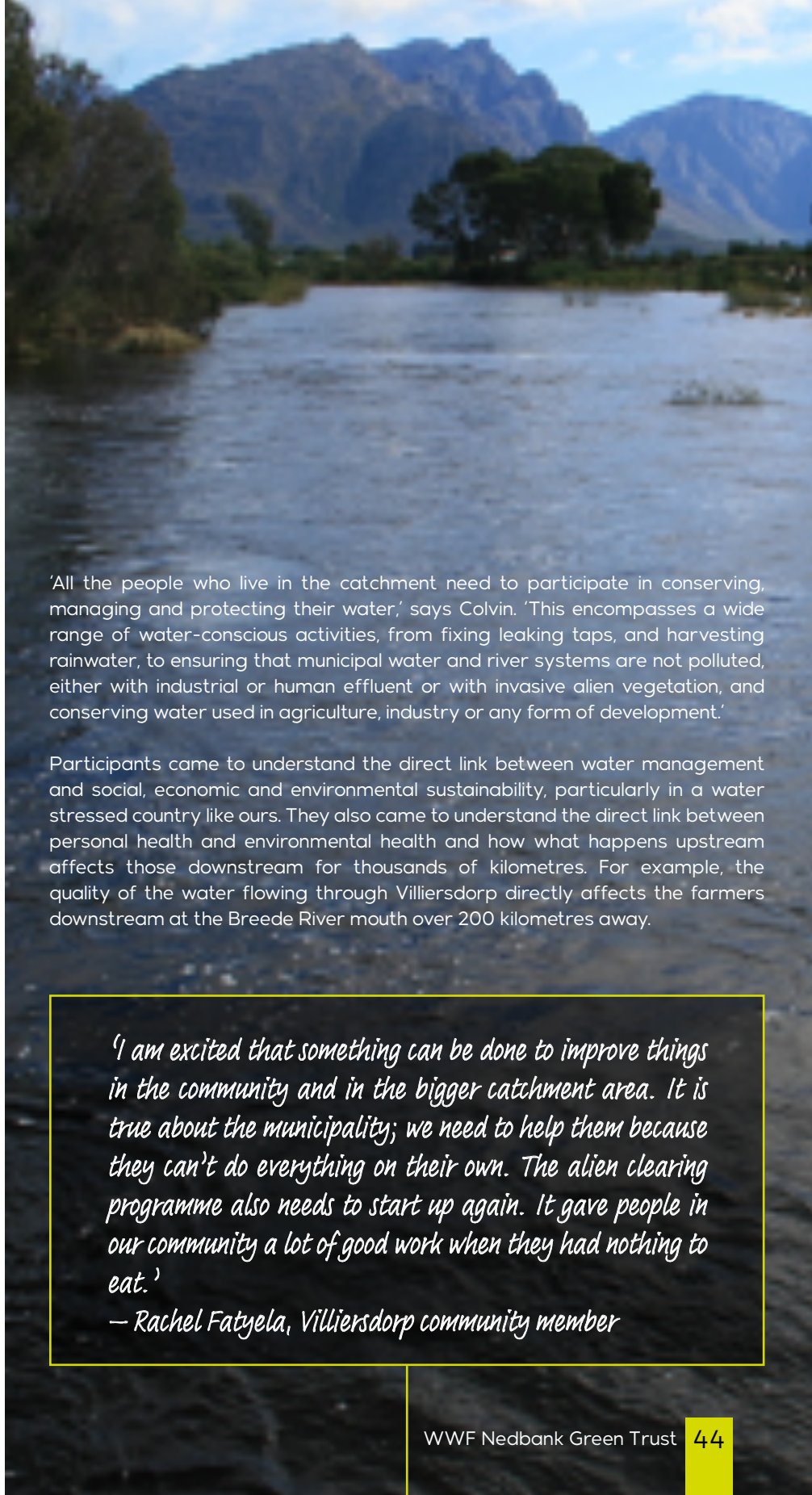
An Integrated Water Resource Management (IWRM) capacity-building programme held in the Breede–Overberg catchment management area, was designed to take participants through the complex issues surrounding water conservation, water management and development. Comprising six sessions, the WWF Nedbank Green Trust programme covered legislation, catchment management, rivers, groundwater, estuaries and wetlands, culminating in a strategic storytelling session where participants presented, discussed and debated water management issues and management options for their local catchments. It equipped the group to participate in the effective development of a management programme for their catchment.

Department of Agriculture civil engineer Qcibisa Mangcu-Qotyiwe was one of 80 participants from the six catchment management zones in the Breede–Overberg region, where natural ecosystems, agricultural enterprises and urban settlements compete for space and water. Sectors represented at the IWRM course included government, civil society, emerging farmers, commercial farmers, environmental organisations, water institutions, industry and ecotourism.

Among these participants were 40 historically disadvantaged people, with a healthy percentage of women and young people, all actively engaged in communities within the catchment, including Rawsonville, Worcester, Ceres, Villiersdorp, Robertson, MacGregor, Bonnievale, Ashton and Swellendam.

'IWRM is part of what is called rights-based development where public participation leads to community awareness of the need to take ownership of their water at all levels,' explains Christine Colvin, WWF Senior Programme Manager for Freshwater, whose team managed the programme.

Catchment management areas (CMAs) were established by government with the aim of reconfiguring how water is managed in South Africa, so that it is firmly linked to the resource base and along catchment boundaries, in order to encourage citizens, municipalities, farmers and industry based in the catchment regions to join hands and help manage the flows through the catchments.



'All the people who live in the catchment need to participate in conserving, managing and protecting their water,' says Colvin. 'This encompasses a wide range of water-conscious activities, from fixing leaking taps, and harvesting rainwater, to ensuring that municipal water and river systems are not polluted, either with industrial or human effluent or with invasive alien vegetation, and conserving water used in agriculture, industry or any form of development.'

Participants came to understand the direct link between water management and social, economic and environmental sustainability, particularly in a water stressed country like ours. They also came to understand the direct link between personal health and environmental health and how what happens upstream affects those downstream for thousands of kilometres. For example, the quality of the water flowing through Villiersdorp directly affects the farmers downstream at the Breede River mouth over 200 kilometres away.

'I am excited that something can be done to improve things in the community and in the bigger catchment area. It is true about the municipality; we need to help them because they can't do everything on their own. The alien clearing programme also needs to start up again. It gave people in our community a lot of good work when they had nothing to eat.'
— Rachel Fatyela, Villiersdorp community member

2013 - 2016
There's life in the Duzi

Young boys watching the Duzi canoe marathon Photo: Paul Weinberg

A young man on a mountain bike is cycling along the sewer line near Ashdown Township on the legendary Msunduzi or Duzi River in KwaZulu-Natal. The alien invasive bush has been cleared into a decent track to open access to the sewer lines. He stops at a point where sewage is pouring into the river from a leak in the pipe, takes out his cellphone, logs a GPS reading, photographs the leakage and sends the information to the Msunduzi Municipality.

He is one of a team of nine pollution monitors and 27 sewer access clearers from the nearby Edendale Township who have been employed by the Msunduzi Sewer Project. This is a formal partnership between the Duzi-uMngeni Conservation Trust (DUCT) and the Msunduzi Municipality, facilitated by DUCT's Msunduzi Green Corridor (MGC) pilot project. Funded by the WWF Nedbank Green Trust, the MGC is managed by Richard Clacey, a local economic development and environmental specialist who focuses on the river health of the Msunduzi River and development issues in Edendale Township.

From 2013, a three-year MGC pilot project promoted partnerships between communities and the public and private sector, to address the rapid deterioration of of the Duzi River, addressing both the severe sewage contamination and solid waste problem. 'To achieve this, we have a long-term vision of establishing a Green Corridor along a 60 km stretch of the Duzi – from its source through the Edendale Valley to Camps Drift (the start of the Duzi Canoe Marathon) linked by "Green Hubs",' Clacey explains. Initiatives like this bring hope to the Duzi River: communities living along the Duzi will have improved health; jobs with the Green Hubs and river health can be created; and the water will be cleaner – hopefully clean enough for the legendary Duzi Canoe Marathon to continue for many years.

The annual Duzi Marathon contributes significant income, employment, and educational and development canoeing opportunities, which result in the economic upliftment of communities in the uMngeni Valley, fed by the Duzi River. All this will fall away if the Duzi River's unacceptably high *E. coli* levels – caused largely by sewage contamination – are not addressed.

Established in 2005, DUCT was initially driven by Duzi Marathon canoeists but it has since grown into a significant sustainability programme that addresses pollution in the Duzi. The WWF Nedbank Green Trust's funding of DUCT's work included the establishment of Eco Clubs at approximately 40 schools. Several of the schools are environmental champions, with vegetable gardens, recycling systems and a pristine environment. But directly outside their grounds, vast amounts of waste are left lying around.

Anything over an *E. coli* count of 1 000 is a health risk for direct contact and the Duzi Rivers frequently register counts well over 10 000 year-round, sometimes even above the 100 000s. This is a severe health threat to the many communities who live alongside the river and its tributaries, and who utilise the water for drinking, agriculture and industry.

'The sewerage infrastructure in the Duzi is not being sufficiently monitored and maintained and is becoming increasingly dilapidated in certain areas. The manholes are used as dumping sites and sewage pumps out of them and into the river. As many as 12 manholes a day are pumping sewage directly into the Duzi,' says Clacey. 'We need to expand the meaning of environment to all the resident communities and as part of our approach to achieve this, we cleared a running and cycling trail in the natural environment around Ashdown,' Clacey explains.

'In 2015 we hosted the Msunduzi Green Corridor Trail Run and it was the first time that many members of the community had been into their own green areas.' The project also partners with the Msunduzi Municipality to address the pollution and sewage leakage issues. 'We are employing teams to cut paths along the sewer lines so that leakages can be timeously identified and logged by our cycling teams. We ascertain the cause of the leakage and alert the municipality to the exact location to assist in more efficient municipal response,' Clacey explains.

'We also monitor how long it takes for the problems to be fixed. It is a slow process, but we are confident that we will be able to start expanding the Green Hubs. There is no alternative, the health and economy of the people, river and region depend on it.'

2014
Water for me, water for you, water for South Africa

In the rural areas, how your upstream neighbours manage their water directly affects the quality and quantity of the water you receive. Which is why the more than two million water users along the 230 km Pongola River (from source to sea) are being encouraged to come together to co-manage this strategic South African water source in *Water Security for Pongola*, a key WWF Nedbank Green Trust project.

Starting in the headwaters of the Enkangala grasslands near Utrecht and Wakkerstroom, and ending in the Indian Ocean in Mozambique, the Pongola River and its catchment supply a wide range of water users, including forestry, farmers, agri-industry, towns and rural communities.

Here, in these grasslands, you will find the headwaters of the Vaal, Tugela, Usuthu and Pongola Rivers, which provide clean, potable water for Gauteng, Mpumalanga and KwaZulu-Natal. Without this water South Africa's economy could not survive.

Freshwater conservation has been a priority for the WWF Nedbank Green Trust since its inception. One of several key water projects that it has funded since 2002 is the Enkangala Grasslands Project – encompassing a high water production area for South Africa of 1,6 million hectares of grasslands between KwaZulu-Natal, Mpumalanga and the Free State.

Apart from its priceless water value, Enkangala is a key biodiversity area, rich in rare plant and animal species. The Pongola headwaters, for example, are the last remaining breeding grounds of the endangered yellowfish and home to the critically endangered southern barred minnow.

Downstream from the headwaters are fruit and sugar cane farmers, sugar mills, agri-industry (such as Illovo Sugar) and many rural communities. A high percentage of financially impoverished people live in the Pongola catchment, without water services or sanitation services. Many people still have to fetch their daily water from the river and use the bush or river as a toilet.

This puts them at risk of a range of waterborne diseases, including cholera and dysentery, and creates a situation where the river water can test for unacceptably high levels of faecal matter and *E. coli* bacteria. Large sections of the Pongola catchment are also infested with alien vegetation, which absorbs vast quantities of water. Other sections of the catchment are overgrazed, leading to topsoil being washed into the river, causing rapid silting of the dams downstream.

To boost water quality and water security along the Pongola catchment the project team is engaging with landowners, local government, communities and agri-industry. At the same time it is addressing better sanitation methods and looking at introducing basic water filters and appropriate water treatment methods at the village or household level.

WWF-SA's Senior Manager for the Land and Biodiversity Stewardship Programme, Angus Burns, and his team, including Ayanda Nzimande and Sam Mnguni, have been working intensively with government, farmers, landowners, land restitution communities and conservation organisations to conserve the grasslands, secure water production, and encourage sustainable livestock farming practices.

A positive starting point is that many of the commercial farmers, and the Impala Water Users Association in the Pongola catchment near the town of Pongola in northern KwaZulu-Natal, are getting together with their neighbouring communities upstream to discuss co-management of water resources, and to look at ways of improving farming methods, and water and sanitation systems.

2012 - 2014
No-go water production areas

In the grasslands of Mpumalanga and KwaZulu-Natal the rush for coal mining applications is threatening South Africa's key water and food production areas. Many of these applications are in places that should be definitive no-go areas because of their water production, food production and biodiversity value, and because coal mining is known to pollute water.

'There is a deeply concerning incompatibility between what is happening with mining and water security in South Africa. Linked to water security for the country is economic and food security,' says WWF-SA's Senior Manager for the Land and Biodiversity Stewardship Programme, Angus Burns.

'I need to be clear that we are not pitting conservation against mining,' continues Burns. 'We recognise that responsible mining is a key contributor to economic growth and employment. But mining at the source of key water production areas does not make any sense: not economically, socially or environmentally. It needs to be avoided and strategically addressed.'

To address this proactively, the WWF Nedbank Green Trust funded the Mining Engagement Project in the Enkangala grasslands from 2012 to 2014, led by Burns.

'Coal mining is all too often seen as an easy way to make money, with a large number of fly-by-night mining companies applying for prospecting rights anywhere they can. This includes high water production areas, even where the coal reserves are marginal,' says Burns.

'Enkangala has been burdened with several of these applications. Mining companies come here and promise the local communities plenty of employment for 20 years, which doesn't materialise. Many of the companies close or are liquidated after a few years, leaving the local communities with polluted water.'

Over 400 hectares of the 1 400-hectare farm of Enkangala livestock farmer Ralph Bohmer have become unusable because the grass and water are toxic from a defunct coal mine.

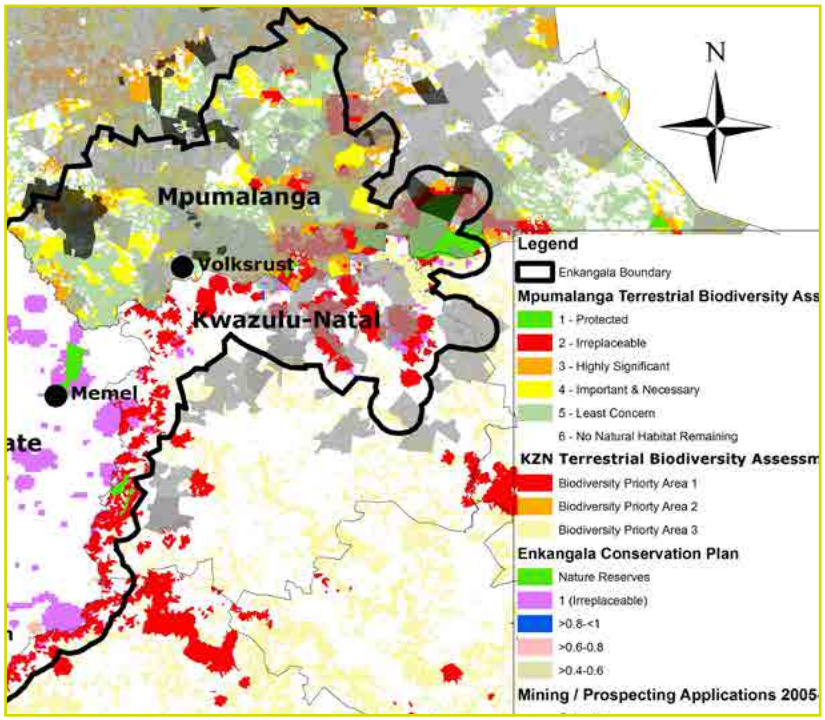
One of the Mining Engagement Project's objectives was to dissuade government and mining houses from permitting mining in priority and protected areas. The project therefore developed standard, repeatable protocols that can be used by all, and will assist communities facing mining threats in what should be no-go areas.

In 2014, Burns and his team produced *Mining and Biodiversity: Evaluating EAP standards in the sector*, a WWF Nedbank Green Trust-funded report on the standards of environmental assessment practitioners (EAPs) in the mining sector.

Burns says that EAPs play a critical role: 'They are meant to filter mining applications with acceptable impacts from those that would have unacceptable environmental impacts, and then to present their findings to the relevant authorities in an objective manner – thus promoting sustainable development in South Africa'.

'The report revealed over 30% non-adherence to the key biodiversity principles contained in the government endorsed Mining and Biodiversity Guidelines released in May 2013.'

In light of this, WWF-SA called for government to appoint a registration authority for EAPs to ensure compliance and higher standards in the industry. In 2018 Environment Assessment Practitioners Association of South Africa (EAPASA) was formally recognised to carry out this role.



2014 - 2017
Water returns from alien clearing

The WWF Nedbank Green Trust funding is also helping to develop small enterprises from the cleared wood biomass, including charcoal, biochar and compost production businesses. Biochar is a refined version of charcoal, which is used to dress soil and retain moisture in the soil. It is an important ingredient in compost.

The water returns from clearing one hectare of black wattle in the Keurbooms River catchment in the mountains above Plettenberg Bay are calculated at 1 773 m^3 (cubic metres) per year. The cost of clearing 141 hectares of black wattle and other invasive alien trees, freeing up 250 000 m^3 of water per year into the Keurbooms River catchment, is approximately R2,5 million.

By comparison, the cost of the Plettenberg Bay desalination plant over three years is approximately R38 million, which yields 250 000 m^3 of fresh water per year when fully operational. The figures speak for themselves, but it has been a long, hard battle over many years to secure government buy-in and support for alien vegetation clearing projects.

In 2014 Eden to Addo, a non-governmental organisation (NGO) supported by WWF-SA, the WWF Nedbank Green Trust and the Table Mountain Fund, managed to secure three years of funding to the value of R7,7 million from the Department of Environmental Affairs to clear alien vegetation in the Keurbooms River catchment, notably black wattle, eucalyptus species, blackwood acacia and runaway pine species that have escaped from commercial pine plantations.

'This kind of project is not negotiable; there is an increase of alien infestation of over 10% of the landmass per year. It's unsustainable and we are already many years down the crisis,' says the project manager, Pam Booth, an environmental scientist and a founder director of Eden to Addo.

'In 2010 the Bitou Municipality, which includes Plettenberg Bay and surrounding communities, declared a state of emergency because there was no water left in the Keurbooms River for domestic purposes, and the flow had gone below the ecological reserve of 300 litres per second.' The emergency response was to finance the construction of a desalination plant, while the catchment-clearing solution was turned down. 'It's all about the historical belief in hard engineering solutions, which in this case did not prove successful, as the desalination plant in Plettenberg Bay is often not operational,' Booth explains.

Fortunately, the inadequacy of the technical response opened the way for an ecological services solution, and in the first two months of the project they cleared approximately 55 hectares in the riparian zone, which was 90% dense with wattle. Another extremely exciting part of the project is the use of biological control processes, as Booth explains: 'A new biocontrol agent for black wattle is a midge from Australia that has been tested for over 20 years. We get it from the Plant Protection Research Institute in Stellenbosch, and we released the first batch of midge cocoons in 2012 and 2013.' When the midges emerge, they penetrate the flowers and destroy them, thereby stopping the tree's production cycle before it begins to seed. A weevil, also from Australia, called *Melanterius maculata*, which consumes the green seeds on the tree has also been released. 'It will be the greatest reward for me to see riverbeds that have been dry for decades, filled with water once more.' says Booth.

Environmental scientist, Pam Booth

2013 - 2016
A river runs through it

The Eerste River is the main river running through Stellenbosch. From afar it looks like an idyllic setting, but up close the polluted water in the Eerste and in the two other rivers that flow into it, the Plankenbrug and Veldwachters, poses a serious health risk to the greater Stellenbosch community. It also threatens the viability of the area's key economic drivers, notably the wine and fruit producers in the Eerste River catchment.

In response, concerned citizens and stakeholders from every sector of the Stellenbosch community came together in 2013 to form the Stellenbosch River Collaborative (SRC). In partnership with the WWF Nedbank Green Trust and two conservation organisations – Living Lands and the Wildlands Conservation Trust – the SRC is working on the restoration of the Eerste River catchment.

'It is all about what we call the "river connect" – about connecting neighbours and communities upstream and downstream of the Eerste River to restore health to the river for every member of the greater Stellenbosch community,' explains Dr Charon Marais who coordinated the SRC and has a PhD in sustainability and transformational governance. 'From people living in Kayamandi and Enkanini informal settlements to big businesses such as Spier and Distell, the health and sustainability of the rivers affect one and all.'

Stellenbosch Municipality is responsible for river health. However, heavy sewage leaks from the municipality's waste water treatment plant and pollution from the Plankenbrug industrial area and the informal settlements are continuous sources of river contamination.

Marais says, 'The true gravity of the situation was brought to public attention through national media coverage when the Wynland Water Users Association, representing farmers, individual users, conservation authorities, and the Department of Water Affairs, took legal action against the municipality for non-compliance.'

The SRC has been instrumental in bridging the divide and creating a space where the municipality can come on board and play its part in a number of river restoration initiatives.

One of these is the Enkanini water and sanitation pilot programme launched in March 2016, in partnership with Living Lands, Isidima Design and Development, and a group of people from the Enkanini informal settlement who named their project 'The Enkanini Water Hustlers' with the slogan 'Changing the Flow'. They explained that they chose the name 'Hustlers' because that is how they live; if you don't hustle, nothing happens.

All forms of pollution and effluent from the Enkanini community end up in the Plankenbrug River. To tackle this with the community members, the WWF Nedbank Green Trust project team drew on learnings gained from the WWF Nedbank Green Trust Msunduzi Green Corridor (MGC) – a pilot project promoting partnership action between communities and the public and private sector to address the rapid decline of the Duzi River.

The Water Hustlers took on the responsibility of monitoring the water quality, reporting leakages, burst pipes and pollution issues in Enkanini and visiting households to raise awareness about water. The manholes in and around Enkanini have been painted and numbered to be able to identify them for faster municipal responsiveness when they are overflowing with pollutants. Stellenbosch Municipality is also working on bringing services to over 1 000 households in Enkanini, including clean water and decent sanitation.

The Enkanini Water Hustlers and the SRC receive considerable support from Spier and Distell. All members of the greater Stellenbosch community recognise the principle of 'my neighbour's water is my water' and are working to achieve better quality water throughout their catchment.

2017
Doctor of Chemistry combines freshwater and fuel

Doctor of Chemistry and founder of sustainable development solutions company Tomorrow Matters Now, Dr Jaisheila Rajput, applied her mind to the pressing need for freshwater and fuel in South Africa.

In 2016 Rajput spent a year researching and reporting on a WWF Nedbank Green Trust-funded project that can unlock freshwater resources as well as utilising the biomass from invasive alien trees removed from critical watercourses.

'We focused on two project areas – Riviersonderend and George in the Western Cape – where there are active alien vegetation clearing projects in key water catchments, and where there are also forestry plantations,' the University of Cape Town PhD explains.

'We mapped the alien vegetation in the catchments, watercourses and rivers that threaten water security for two reasons: the alien vegetation absorbs vast amounts of water and there is the risk of trees falling into the river and obstructing the flow.'

In Riviersonderend the key alien invasive species are acacia, pine and eucalyptus, and in George they are acacia, pine, hakea and wattle.

'We then looked at what had been done before in the alien plant clearing and water space in the region, what worked and what didn't. We also mapped the location of forestry plantations in these areas to identify supplementary or alternative biomass reserves, in order to ensure there is continuous, year-round supply.'

During the Western Cape's winter rainfall season, for example, there is no alien vegetation clearing in many parts. It needs, therefore, to be supplemented with forestry biomass that, for economic reasons, is available within a 50 km radius of the town or industry where it is required.

During the project Rajput and her team collaborated with representatives from the Department of Environmental Affairs' National Resource Management Project, the Council for Scientific and Industrial Research, WWF and WWF corporate partners such as SABMiller, which has an extensive presence in the hops-growing Outeniqua Mountains area around George and is active in alien vegetation clearing projects in the key water catchments here.

Dr Jaisheila Rajput

The project team had discussions with the Riviersonderend and George communities and municipalities to identify suitable applications and markets for the biomass, including domestic heating, energy-efficient clay brick manufacturing, eco-furniture manufacturing, light industry and boilers, such as those used by SABMiller.

'From here we determined how to holistically optimise the combination of freshwater, forestry and alien vegetation biomass for regional communities and industry at different scales and for specific needs,' continues Rajput. 'Examples of regional needs are thermal energy (heat or steam) for the hops fermentation process and wood preparation for the furniture industry.'

The viability determination process included calculating the economics of alien vegetation clearing from water sources, the distance to market, the value of the alien and forestry biomass itself and how it could efficiently, more cost-effectively and with a lower carbon footprint, replace existing fuel sources such as coal.

The high transportation costs need to be part of the equation, as does the complexity of removing aliens from inaccessible mountain areas. Beyond a 40-degree slope, specialised equipment is required for clearing and harvesting biomass, and this comes with additional costs.

'It is a misconception that alien vegetation is available free of charge,' says Rajput. 'The clearing is subsidised by Working for Water and private landowners, but this is only part of the cost of harvesting and delivering it.

'At the same time it has many advantages, including the fact that alien vegetation biomass is considered to be carbon neutral, which is increasingly important for industries that need to offset their carbon footprint, such as SABMiller and Mondi.'

Another significant advantage is the establishment of decentralised, sustainable jobs through the creation of new, local biomass industries and businesses. For example, towns and areas where there is an abundance of alien and forestry-derived biomass could leverage off the Department of Environmental Affairs' Lighthouse Project where wood chips and wood fibre are used to create a composite, which is then mixed with concrete to make prefabricated walls for low-cost housing. This lends itself to the establishment of a fleet of start-up businesses. Other businesses include the processing of the biomass into logs or wood chips to fuel wood gasification units that could be marketed with the fuel. These units can be used to heat schools or to produce biochar, which is used by farmers to enrich the soil.

The George campus of Nelson Mandela Metropolitan University has also developed a solar-powered kiln, which is used in greenhouse-type structures to dry wood. What this means is that alien biomass for furniture and other needs can be dried and stored for use during the non-clearing winter season. This is an important breakthrough, as most of the invasive alien trees have 40% water retention.

'Over the past year what we have done is demonstrate the feasibility of a viable biomass beneficiation approach that is value-chain based and gets everyone on board – from the clearers to the technology developers to the start-ups and corporates,' says Rajput. 'It's the first step, but what is exciting is that there is definitely opportunity to viably, sustainably and exponentially develop this entire industry.'

Converting invasive alien plants into biomass
Photo: Kobus Tollig/WWF-SA

2017 - 2020
Water and cattle for our country

Umzimkulu River in the Matatiele region

'Our work requires reintroducing some of the traditional methods of rotational grazing in combination with high-density, fast-rotation grazing. We have a team of 13 ecorangers who manage and monitor the grazing programmes'
– Sissie Matela

The Matatiele region of the southern Drakensberg area is the watershed between South Africa and Lesotho at the source of the Umzimvubu river system, which extends all the way to its mouth in the Indian Ocean at Port St Johns. It is the third-largest river system in southern Africa, draining over two million hectares, and supporting one million people along its length, 70% of whom live in rural settlements.

Matatiele is ideal cattle country, with rich grasslands and wetlands that serve as water storage areas. Well-managed livestock grazing is highly compatible with grassland and water system rehabilitation, and it provides a decent form of income for the local farmers. Poor management of water and grazing, by contrast, leads to land degradation, poor grazing and severe soil erosion, as is evident in this region. Vast amounts of topsoil are continually being washed downstream and ultimately out to sea through the Umzimvubu river system, which has the highest sediment load of any river in South Africa.

To address this holistically, the WWF Nedbank Green Trust is funding a water and farming support project to improve livestock grazing methods in five communal grazing areas in the greater Matatiele district. These areas are situated high up in the catchment, as all rehabilitation efforts have to start at the top of the catchment to slow down the water flow and restore the grass cover.

Communal farmers are the environmental and water stewards of the region and the project is partnering with them to manage their rangelands and their cattle more productively and sustainably. Leading the project are soil scientist, Sissie Matela, and environmental scientist, Nicky McLeod, both of Environmental and Rural Solutions (ERS), a non-profit social enterprise organisation they started in Matatiele 15 years ago. ERS is also part of a voluntary alliance: the Umzimvubu Catchment Partnership Programme.

Soil scientist Sissie Matela

'Livestock is the currency here and many families are entirely dependent on it for their livelihoods. A key component of this project is to produce a healthy, resilient landscape for the cattle and provide households with increased income.'
– Nicky McLeod.

'We work in partnership with the traditional leaders and livestock farmers who are part of the communal grazing groups in this project, including 55 rural villages and 190 households with an average income of R43 000 a year derived from cattle sales,' says McLeod.

Until recently, the farmers would sell their cattle locally for traditional use or to individual speculators, and they did not receive market-related prices. Alternatively, they would walk their cattle for two days or more to get to the nearest livestock auction, and the cattle's condition would decline en route.

As part of the grazing improvement project ERS is working with a mobile cattle auction company called Meat Naturally Africa Pty Ltd, which sets up auctions in the rural areas and the farmers then sell their cattle in situ at competitive prices. 'It's a very productive venture growing out of collaboration with Conservation South Africa, also one of our key partners,' McLeod explains.

One of the communal farmers who sold cattle worth over R90 000 at a recent Meat Naturally Africa auction said: 'I don't need to leave my family to go and find work in the cities, I just need to look after the grasslands and my cattle. My job is right here.'

The main bidders at the auction are commercial cattle farmers and livestock agents. The farmers who participate in the grazing improvement project pay a lower commission to the auctioneer (3% instead of 6%) and they are assisted with their cattle vaccinations.

The November 2017 auction in Mzongwana, one of the project areas, was the 16th auction held by Meat Naturally Pty, which also operates in Botswana and Namibia. The auction sold 128 animals (cows, oxen and bulls) from 50 households for over R826 000, with an average price of R20/kg. The previous two auctions in the Mzongwana project area brought in R900 000 and R1,2 million.

'This is 100% grass-fed beef and it has a far lower water and carbon footprint than feedlot beef,' says Matela. 'It should be available to all South Africans and it should fetch a top-grade price, but the beef classification system in South Africa favours grain-fed or feedlot beef. What we need to do is to educate the consumer that grass-fed beef with its creamy colour fat is the best beef to purchase. At the moment, only feedlot beef with its white fat is sold as A-grade.'

McLeod says, 'Through the project, 255 households have increased their income to the equivalent in rand value of approximately 120 jobs in extended public works programmes such as Working for Water. It showcases livestock farming as a strong form of local self-employment and income generation for young and old, men and women.'

Adding to this is the EcoFutures initiative that ERS is driving to empower local learners about careers in the wide range of environmental fields, from tertiary educational studies (such as environmental or veterinary science) to becoming livestock farmers, water technicians, plumbers, renewable-energy entrepreneurs, paravets or ecorangers. There are also several ongoing invasive-alien clearing projects in the greater Matatiele project area, predominantly to address the black wattle infestations in the catchment.

'There are far too many young, unemployed people in the rural areas, and the numbers keep growing. There are solutions, and we are highly encouraged by the growth of this project, which is just the beginning.'

2019
Humans and rivers have a right to water

The United Nations recognises the right to water as a basic human right. South Africa's 1998 National Water Act goes further and stipulates that humans and rivers both have a right to water. By law a certain amount of water must be left in rivers to maintain their health and function – this is the ecological reserve.

The management of South Africa's ecological reserve, as well as public irrigation schemes, are essential to the country's integrated freshwater and catchment management. 'South Africa's handful of strategic water source areas are arguably our most important natural national assets,' says conservation ecologist, Samir Randera-Rees, Programme Manager of WWF-SA's Water Source Areas programme.

Women fetching water from the Limpopo River just outside KNP in Mozambique

Project team members from L to R, Morgan Ntuli, Mbali Mashele, Precious Chawana Photo: Eddie Riddell

A WWF Nedbank Green Trust freshwater project is focusing on the Mpumalanga-Drakensberg Strategic Water Source Area, where the Sabie River flows through Kruger National Park (KNP) and into Mozambique. 'It's important to ensure best practice for the Sabie River and to inspire better and fairer water allocation and management of the entire river system, from the upper catchment all the way downstream,' says Eddie Riddell, the Water Resources Manager for KNP and leader of the WWF Nedbank Green Trust project.

The Kruger to Canyons Biosphere (K2C), which is partnering the Project, spans 2,5 million hectares of conservation land – protected areas, catchments and privately and community-owned land – between Limpopo and Mpumalanga.

Efforts to manage the water quality and quantity or streamflow sustainably and equitably start at the top of the upper Sabie catchment and address issues such as the reduction of streamflow as a result of significant amounts of water being used by agroforestry, alien invasive plants and commercial farming. These increasing and competing demands can significantly reduce the water available to the lower-catchment farmers, the KNP ecosystem, and cross-border flow to Mozambique.

Water is one of KNP's central management pillars, as it plays a key role in maintaining the ecological reserve and health of several rivers in the greater KNP ecosystem. This is a significant contribution to the economy, in addition to the park being a major source of employment and local economic development. 'It is all part of what is called the "Kruger economy". This includes the integrated land-use zone around KNP,' Riddell explains.

The Sabie River deserves special focus, as it has retained a high level of biodiversity, being relatively intact compared with other systems in the area, such as the Olifants and Crocodile Rivers, which are far more polluted and ecologically at risk as a result of industry, agriculture and over-abstraction of water. Riddell explains, 'The more pristine the river, on a scale of A to E, with A being the most pristine, the higher the percentage of water that must be left in the river.

'The Sabie is classified as an AB river, in other words it is close to pristine and, by law, the river has a right to at least 30% of water at all times. The Olifants and Crocodile Rivers are class C rivers, and these rivers have a right to 15% to 20% of water at all times.' Sound water management by industry, farmers, towns and communities is essential to maintain the ecological reserve.

2016 – 2020

Legal protection for SA's strategic water source areas

Male spectacled weaver bathing Photo: Peter Chadwick

Ten percent of South Africa's land area, mostly in the high mountain catchments along the eastern escarpment, generates 50% of the volume of water in all our river systems. This was identified in a substantial research document produced in 2013 by WWF-SA, the Water Research Commission and the Centre for Scientific and Industrial Research, which identified 22 strategic water source areas (SWSAs) in South Africa.

From 2016, a WWF Nedbank Green Trust-funded project set about obtaining legislative protection for South Africa's SWSAs. From this catalytic funding the project has significantly expanded, with progress made in terms of policy being put in place for the legal protection of water, and legislation gathering momentum.

While the concept of SWSAs is well established in South Africa, until now they have never been properly recognised and included in legislation. 'Our goal is therefore to protect these areas with whatever legal mechanisms are open to us,' says Samir Randera-Rees, Programme Manager of WWF-SA's Water Source Areas Programme. 'To this end we asked the the Centre for Environmental Rights (CER) to do a full review of all of South Africa's water legislation. The review established that while there is some mention of SWSAs in the legislation, they were not afforded much legal protection at all.

'However, existing clauses could be used, particularly under the National Environmental Management Act, Clause 24 (2A). Under this clause, we saw the opportunity to have SWSAs declared as environmentally sensitive areas and we have been working with the Department of the Environment, Forestry and Fisheries (DEFF), the Department of Water and Sanitation (DWS) and the South African National Biodiversity Institute (SANBI) to achieve this,' explains Randera-Rees.

Important headway has been made. In 2020 the SWSAs will be recognised as an essential part of South Africa's water security in the draft National Water Security Framework, and the SWSAs have been prioritised in the five-year action plans of DEFF Minister Barbara Creecy. She has created a directorate to drive the protection of 11 of the 22 SWSAs by 2025.

WWF is one of the few organisations working explicitly towards SWSA protection, with support from key partners such as SANBI. Randera-Rees says WWF participates in every water forum and has driven the mandate for SWSAs to be legislated over many years. 'It is the drum we continuously beat, and while we don't claim to be the sole driver of this, we have held the space very effectively, and driven the mandate. We take pride in the fact that this is gaining traction. How we manage our water at every level is not something that can be put off. It is imperative to protect our country's water supply, and it is the business of every South African to support this.'

Rondevlei freshwater lake system, Garden Route National Park
Photo: Peter Chadwick

LAND

LAND INSIGHT

Angus Burns
WWF-SA's Senior Manager: Land and Biodiversity Stewardship

I have been involved in formal conservation for 25 of the WWF Nedbank Green Trust's 30 years, and it has been so encouraging to see the traction that has been gained in protected-area expansion around the country, particularly from the WWF Nedbank Green Trust's investment across key landscapes. This has contributed to the conservation of many remarkable areas, as well as to securing strategic water source areas and empowering people to be the custodians of the rich natural heritage we have in South Africa.

Being a megadiverse country, South Africa is deserving of as much investment as possible to conserve our biodiversity and the associated suite of ecosystem services, including carbon sequestration, freshwater, fresh air, healthy insect populations for pollination, and grazing for livestock.

The protected-area expansion drive is aimed at enhancing landscapes, biodiversity and ecosystem services management, and building increased resilience into these systems in the face of the increasing pressures they are experiencing, including climate change, pandemics, pollution and unsustainable development.

A holistic approach to conservation has evolved over the past three decades, where all the role-players – conservation organisations, communities, government and industry – are empowered to collectively manage our landscapes; to be the custodians of positive change and achieve impact at scale.

The significant support from the WWF Nedbank Green Trust in establishing partnerships with communities that can then derive tangible benefits from conservation initiatives, is bearing fruit. An example is rural communities accessing commercial cattle farming markets while expanding and better managing the protected areas of which they are custodians, and rural communities participating in wildlife reserve conservation and game meat production.

Many lessons have been learnt and many innovations introduced in the past 30 years and we expect to see even greater catalytic outcomes in the next ten years as proven systems and models are replicated throughout the country. Huge congratulations to the WWF Nedbank Green Trust on this milestone, and thank you for all the support and investment. Your pioneering contribution bodes well for the future of conservation.

1998–2012
New era for the ǂKhomani San

The ǂKhomani San maintain their culture and traditions, preserving millennia-old indigenous knowledge systems, and passing them on to new generations.

ǂKhomani San elder Isak Kruiper playing the mouth bow

ǂKhomani San leader Dawid Kruiper is hopefully tracking across the celestial plains where humans and animals co-exist as they once did when the Bushmen people roamed southern Africa. Oom Dawid, leader and icon of the world's first people, died in June 2012 at the age of 76 and was buried in the red earth of his beloved ancestral land, the Kalahari – for which he fought for so long to have restored to his people.

In 1999, 25 000 hectares of the Kgalagadi Transfrontier Park were officially returned to the ǂKhomani San. Despite this, it took twelve long years before they were finally able to freely access the park; and, in 2017 the ǂKhomani San's ancestral land was declared a UNESCO World Heritage Site.

To contribute to the development of the ǂKhomani San's land claim, the WWF Nedbank Green Trust committed funding from 1998 to 2002 and again in 2010/11 Two of the project leaders who engaged with the Kruiper clan for fifteen years are ecologists Dr David Grossman and Phillipa Holden.

Grossman explains that from 1998, corruption and marginalisation almost sidetracked the original claimants' vision for their restituted land, which, apart from the 25 000 hectares inside the park, also includes six farms spanning 36 000 hectares outside of the park. In exchange for votes, many allegedly 'illegitimate claimants' were granted membership to the ǂKhomani San Communal Property Association (CPA), which gave them rights to live on the ǂKhomani San's land. Several government departments also failed to meet their commitments to Dawid Kruiper and his people, such as the preparation of a management plan for their land and the appointment of a manager.

With support from Grossman and Holden and funders like the WWF Nedbank Green Trust, the land inside and outside the park was successfully returned to the ǂKhomani San. The 36 000 hectares of farmland, include the farms Erin and Witdraai. Members of the ǂKhomani San clan live on Witdraai, many in traditional dwellings, while Erin is run as a community-owned, commercial game farm.

Erin (6 000 hectares) is situated in a magnificent part of the Kalahari with rolling dunes and groves of camel thorns. It has a fine spread of indigenous Kalahari game species, including oryx, red hartebeest, springbuck and blue wildebeest. SANParks and Tswalu Kalahari Game Reserve donated approximately 200 head of game to Erin, while the rest was purchased by the community.

With the assistance of various donors, a number of field rangers and game farm assistants have been trained and certified, including Blade Witbooi and Katrina Koper who help manage Erin.

Witbooi has an excellent knowledge of traditional medicinal and food plants and has continued Oom Dawid's veld school tradition. Young and old, all the ǂKhomani San attended the veld schools. Seated round a fire at night in their rustic camp with plaited grass shelters, Oom Dawid would share with them the ancient stories of their people. By day he would show them how to identify spoor and medicinal and food plants in the wild. Dawid Kruiper well understood that times have changed dramatically, but he wanted to ensure that the culture and knowledge of his ancestors werekept alive.

The ǂKhomani San offer unique experiences to tourists in this vast landscape, sharing with them the worldview of the ancient peoples who live in it. Apart from game viewing, visitors can learn from some of the world's most skilled trackers, following animal trails or identifying medicinal plants; they can experience traditional craft making, or listen to storytellers with their ancient tales, passed down through generations.

Returning the land to those who trod so lightly on it for millennia is not only a victory for the ǂKhomani San, but a victory for justice and for the precious environment of the Kalahari.

Blade Witbooi and Katrina Koper of the Kruiper clan qualified as game rangers

2010–2016
Protecting our water factories

'This is the most important thing that has ever happened to conservation in this country,' says 5th generation Luneburg farmer, Horst Filter whose livestock farm lies within the Protected Environment. 'The attention was always on game reserves and the Big 5 and never on critical areas like the grasslands. I think it's very important that this whole initiative filters through to the rest of South Africa.'

Grasslands - our natural water factories Photo: Angus Burns

South Africa cannot secure water production without conserving the grasslands that are the country's natural water factories. They are critical for the nation's water and food production and are home to many threatened wildlife species – key indicators of our ecosystems' health.

Understanding this crucial interdependence, the WWF Nedbank Green Trust has supported major water and grassland conservation projects over the years. From 2002 the WWF-Nedbank Green Trust supported the Enkangala Grasslands Project in one of South Africa's key water production areas. It spans 1.6 million hectares of privately owned farms and communal farms between KwaZulu-Natal, Mpumalanga and the Free State. Here you will find the headwaters of the Vaal, Tugela, Usuthu and Pongola Rivers, which provide clean, potable water for Gauteng, Mpumalanga and KwaZulu-Natal. Without this water South Africa's economy cannot survive.

This led to the proclamation of several protected environments in high-water-yield areas in Mpumalanga, KwaZulu-Natal and the Free State. Protected environments and nature reserves are legislated under the National Environmental Management: Protected Areas Act and are afforded a high level of formal protection against developments such as indiscriminate mining or fracking.

Implementation of the Protected Areas Act is reinforced by the Biodiversity Stewardship programme, a collaboration between government and NGOs such as WWF South Africa and the Endangered Wildlife Trust (EWT) to build strong partnerships with landowners.

The first protected environment, proclaimed in 2010, was the KwaMandlangampisi Protected Environment, situated within the Enkangala Grassland Project area. A critical water catchment area for South Africa, it includes the headwaters of the Pongola and Assegaai Rivers and spans 23 600 hectares of privately owned farmland in the high-altitude grasslands of southern Mpumalanga.

Ranging from 1 400 metres to 2 000+ metres above sea level, it is home to threatened and endemic plant, bird and animal species, including the oribi and South Africa's three crane species (wattled, grey crowned and blue).

Angus Burns, Senior Manager: WWF-SA Land & Biodiversity Stewardship Programme, was a driving force in the creation of KwaMandlangampisi, working closely and tirelessly with farmers, communities and the Mpumalanga Tourism and Parks Agency's (MTPA). 'Grasslands,' he says, 'are vital water catchment and storage areas, ensuring that water is slowly released throughout the year. It is encouraging and inspiring to consider what the legacy that the WWF Nedbank Green Trust investment into grassland conservation has catalysed since 2002.'

Nkosi Mabaso and the Mabaso community in the Enkangala project region have successfully claimed 1 400 hectares of their ancestral land near the headwaters of the Pongola River.

"I am keen to cooperate with the grassland conservation project because it is good for us all," says Nkosi Mabaso who opposes all forms of mining on or near their land because it pollutes the water.

The Mabaso community signed a biodiversity agreement with KZNWildlife and became the first land reform and stewardship project in South Africa.

Protected Environment Expansion

In 2014 the WWF Nedbank Green Trust further contributed almost R1 million to BirdLife South Africa's Important Bird and Biodiversity Areas Programme to secure the formal protection of critical grassland habitats in Mpumalanga, the Free State and Gauteng, based on indicator bird species.

Between 2014 and 2016 additional protected environments were proclaimed in Mpumalanga and the Free State, supported by a number of NGOs, including the WWF Nedbank Green Trust, the EWT and BirdLife South Africa:

- The Chrissiesmeer Protected Environment. Spanning 60 000 ha, this is South Africa's largest protected environment to date.
- Greater Lakenvlei Protected Environment (14 000 ha) in Mpumalanga's Steenkampsberg region.
- Sneeuwberg Protected Environment (17 456 ha) proclaimed in July 2016 and the first protected environment in the Free State.

Nkosi Mabaso signing the biodiversity agreement Photo: Angus Burns

'The project aims to protect the expanded areas from overutilisation and inappropriate development, in order to manage these highland grasslands for sustainable freshwater production and climate change resilience, and to create conservation corridors for the survival of threatened and endemic species,' says the EWT programme manager, Catherine Hughes.

One of the new protected environments in the Free State is in the greater Harrismith area, and includes hotspot areas for the threatened endemic species, the Sungazer lizard (*Smaug giganteus*) and Botha's lark (*Spizocorys fringillaris*). The Verkykerskop–Eeram Protected Environment spans 53 000 ha and 56 farms, and still has large tracts of intact grassland.

The Highlands Grassland Conservation Project, which focuses on protected area expansion in Mpumalanga and the Free State, was initiated in May 2015. Part of the EWT's Threatened Grassland Species Programme, the project is supported by the WWF Nedbank Green Trust, in close collaboration with BirdLife South Africa and WWF-SA.

EWT field officers, Bradley Gibbons and Mauritz de Bruin, use the Sungazer and Botha's lark as the project's flagship species. 'They encourage landowners and communities to become Sungazer Custodians as a precursor to the broader Biodiversity Stewardship initiative,' Hughes explains. 'Travelling far and wide they show communities, farmers and farmworkers what this iconic reptile and the Botha's lark look like, and they talk about how they require intact grasslands for their survival. They also discuss land and water management practices.'

Gibbons is also working with BirdLife South Africa's Ernst Retief, who is leading the Wilge Stewardship Project near Van Reenen in the Free State, another protected environment. This project covers an area of approximately 45 000 ha, bordering the Ingula Nature Reserve. The 24 threatened bird species recorded in this important bird and biodiversity area indicate its significance to birdlife conservation.

In Mpumalanga, the EWT team is also working on the Versamelberge Protected Environment in the Volksrust region. This area of approximately 30 000 hectares contains the province's only remaining large Sungazer population within intact grassland.

Most of the farming communities in these areas have been consulted about the Biodiversity Stewardship programme, and many of them are keen to partner in conservation initiatives and be part of the proclamation process.

Well managed livestock is highly compatible with water catchment and grassland conservation

'Given the budget and resource constraints that provincial government departments are increasingly facing, it is essential for NGOs to work with government, universities and private landowners to expand the highland grasslands protected area footprint for the benefit of all South Africans,' says Hughes.

350 bird species

Some 350 of South Africa's 844 bird species are found in our grasslands, 40% of these are 'grassland specialists', meaning they only live in grasslands and wetlands. Among them are 29 of the 133 South African red data bird species, including all five of South Africa's critically endangered bird species: the wattled crane, blue swallow, Rudd's lark, Eurasian bittern and white-winged flufftail. As an example, there are only about 320 wattled cranes left in the wild, and very few breeding pairs. The demise of these and other grassland species is cause for concern because it directly points to the demise of our water sources, without which we cannot survive.

2004 – 2010
Biodiversity & wine initiative goes global

In 2004 the WWF Nedbank Green Trust agreed to support a fledgling partnership between the South African wine industry and the conservation sector, spearheaded by WWF and the Botanical Society of South Africa. The aim of the partnership was to conserve the highly threatened Cape Floristic Region, home to more than 10 000 plant species and the region where 90% of the country's wine is produced.

The partnership was called the Biodiversity and Wine Initiative (BWI) and no one could have predicted that it would be such a success that it would become the model for five other leading 'new world' wine producers: California, Chile, Argentina, Australia and New Zealand.

The key markets for new world wine producers are the United Kingdom, Europe and Scandinavia, all of which have become increasingly focused on environmental sustainability and the carbon footprint of products they import.

In response, South Africa, California, Australia and New Zealand pooled their resources to develop a carbon calculator, which accurately measures their respective industry footprints. 'Without these measures new world wine producers can be at a significant disadvantage due to the distance factor to European markets where there is a strong retail sector focus on labelling food miles,' Kotze explains.

Another BWI initiative – in partnership with Wines of South Africa and the Industry Integrated Production of Wine Scheme – ensures that all South African wine products carry a sustainability seal on the neck of each bottle, stating 'Integrity & Sustainability Certified'. The seal provides a guarantee that these South African producers are complying with a minimum environmental industry standard.

'We are sharing our conservation-based approach with the other new world wine-producing countries because we operate on the basis that the more countries that participate in sustainable wine production, the faster we can lobby consumers to buy our wines and help conserve the planet.'
– Inge Kotze

Each bottle of wine can be traced to the farm where it was produced, guaranteeing that environmentally sustainable practices are implemented and audited on these farms.

Building on this minimum industry standard, all BWI members and champions are also entitled to use the 'Protea and Sugarbird' BWI logo on their products to demonstrate their environmental commitment and dedication to conserving the Cape Floral Region.

'It's incredibly satisfying to know that the area currently conserved by BWI's 187 participating South African wine producers already exceeds 126 000 hectares. This represents more than 100% of the total vineyard footprint of 102 000 hectares in the Cape winelands,' says BWI project leader, Inge Kotze.

She emphasises the exceptional support BWI has received from the WWF Nedbank Green Trust and from Wines of South Africa, which has been involved with BWI since inception and continues to help fund the initiative. 'We still have much work to do. The BWI will be assisting the industry in developing a strong freshwater conservation focus, as water (both quantity and quality) is certainly the greatest limiting factor to the productivity and sustainability of the industry.'

BWI Champions and Members

A BWI Champion is an exemplary environmental and conservation leader, well above and beyond legal compliance. These wine farms have committed at least ten per cent of the entire farm to long-term conservation. They work continually towards environmental and agricultural best practice, including managing and reducing their water and waste footprint, looking after the soil, removing alien plants, managing fire hazards and encouraging all their staff members to adopt a more environmentally friendly lifestyle

BWI Champion: Cederberg Wines

'Conservation consciousness is not a label or a trend; it is an essential way of living,' says David Nieuwoudt, owner and winemaker at Cederberg wines – one of the farms awarded Champion status by the Biodiversity and Wine Initiative.

'Dwarsrivier Farm, home to Cederberg Wines, has been in our family since 1893 and for the past century we have looked after the environment. We live in such a beautiful and remote area it is our minimum responsibility to look after it.'

The highest vineyard in South Africa at more than 1 000 metres, Cederberg Wines encompasses all three of the Western Cape's major vegetation types: mountain fynbos, renosterveld and succulent Karoo. Only 53 hectares are vineyards.

'We will ensure that our farm's vineyards never exceed 60 hectares and we are busy rehabilitating 150 hectares of former fruit orchards back to fynbos,' Nieuwoudt says.

Surrounded by two nature reserves – the Cederberg Wilderness Area and the Matjies River Nature Reserve – Cederberg Wines helped to initiate the Cederberg Conservancy in 1997. A long list of conservation projects operate on the farm, including the Cape Leopard Project, the Clanwilliam Cedar Tree Project and a University of Cape Town project on the indigenous freshwater fish species still naturally occurring in the Dwarsrivier that runs through the property.

Cederberg Wines has also extended environmental practices to the 25 families who work on the farm.

'We believe in extending the conservation-conscious ethos to the people who work with us. They are part of a wetland rehabilitation project that provides water for their recently planted organic vegetable gardens. Families have also taken it upon themselves to clean up the litter around their houses and to separate out their waste. We have introduced them to glass- and can-recycling and they are using the wet waste for compost for their gardens.'

'Now our workers comment on how the wetlands are improving, and they are also taking active responsibility for the environment and producing their own healthy food.'

2014 – 2017

Demand for 'white gold' focuses attention on the Cape Floral Kingdom

Broadly known as fynbos, many species have been exported for decades but certain species, such as the king protea, protea compacta and silver brunia, are currently trending in Europe, Asia, Russia and other international markets. They have unusual aesthetic appeal and they last far longer than non-fynbos flowers.

Harvester Nokuzola Tshontshi carrying Metalasia muricata Photo: Flower Valley Conservation Trust/DreamPix Photography

Silver brunia, a plant with perfectly shaped silver-green balls (or baubles), is endemic to South Africa's Cape Floral Kingdom and has been dubbed 'white gold' because of escalating demand from florists worldwide.

This plant is focusing attention on the more than 9 000 indigenous plant species in the Cape Floral Kingdom – also known as the Cape Floristic Region – the smallest, richest floral kingdom in the world.

Cape Flora South Africa statistics indicate that in 2016/17 approximately 1,7 million stems of silver brunia (*Brunia laevis*) were exported. Silver brunia is included in the mixed green stems category used to make up fynbos bouquets, and is the second-most-harvested species in the wild in this category.

'A species in demand like silver brunia, which is wild-harvested in the Overberg region, highlights the importance of sustainably managing this industry, supporting research and monitoring to understand the impact of harvesting fynbos species, and working to control the poaching of species in high demand,' says Roger Bailey, of the Flower Valley Conservation Trust, a non-governmental organisation founded in 1999 and based in Flower Valley Farm, just outside Gansbaai in the Western Cape.

The Flower Valley Conservation Trust launched the Sustainable Harvesting Programme for fynbos in 2003. The trust's team partners with farmers, harvesters, communities and government and conservation organisations, focusing on environmental, social and labour compliance. CapeNature, a government organisation responsible for biodiversity conservation in the Western Cape, is a major partner in the programme.

The programme's Code of Best Practice for Wild Harvesters sets out how harvesters should pick fynbos to conserve the plant and surrounding vegetation. The stem should be cut at a certain length, and at a 45-degree angle. It is also vital to leave seed stock in the veld, so only a certain number of flower heads should be removed. In the case of silver brunia and a few other species, research has suggested that only 25% to 50% should be harvested each year.

The programme's Vulnerability Index advises what should and should not be picked for the market. For example, *Erica irregularis* used to be harvested, but now may not be picked due to its endangered status on the South African National Biodiversity Institute's (SANBI) Red List.

'The Sustainable Harvesting Programme demonstrates that it is certainly possible to sustainably harvest fynbos in a commercially viable way, creating green businesses and decent, sustainable jobs for people living in the fynbos region,' says Bailey.

Fynbos harvesters range from subsistence harvesters to commercial harvesting teams linked to pack houses or landowners. The programme is voluntary and is all about promoting the green economy and increasing the number of biodiversity stewards on private land. Harvesters sign a statement of commitment, in which they undertake to work towards environmental, social and labour best practice, as set out in the Flower Valley Code of Best Practice.

Nedbank's Green Affinity Programme, through the WWF Nedbank Green Trust, committed three years of funding to support the programme's work and its expansion drive. The funding included the salary of Conservation Extension and Applied Research Coordinator, Kirsten Retief, who has a master's in Conservation Biology from the University of Cape Town.

Retief works closely with 18 harvesting teams over a 75 000 ha area. 'It's essential to build trust with the harvesters over time as people don't always readily share information or participate in research,' she explains. 'Through ongoing research, we can better understand many of the threats to fynbos. In addition to overharvesting, threats include invasive alien plants and poor land management.'

The programme's focal area has been the 270 000 ha Agulhas Plain, where there are close to 2 500 plant species of which approximately 100 are endemic, at least 110 are on the Red List and about 40 are unique vegetation types. Approximately 150 species from this region are harvested for the local and international flower trade.

Sustainability is something markets are increasingly asking of their suppliers, and this is the only programme that provides it in the fynbos industry. The Sustainable Harvesting Programme provides an improvement plan to the farmers, landowners and harvesters to assist and offer support to them as they start the journey towards best practice and sustainability.

2017

Restoring the lost jewel of the Western Cape

'Renosterveld is one of the richest ecosystems in the world, mostly due to its extraordinary bulb diversity. However, 95% of it has been replaced by large-scale commercial agriculture, mainly wheat, barley and canola, which are rotated with oats and lucerne,' says project leader, Dr Odette Curtis, Director of the Overberg Renosterveld Conservation Trust.

Dr Odette Curtis

A portrait of the Western Cape 300 years ago would show rolling expanses of Renosterveld (rhinoceros-field), a vegetation type with an extraordinary diversity of bulb species, being grazed by large numbers of big game, including the extinct bluebuck and quagga, as well as the eland and black rhino – hence its name.

The large numbers of game have gone and the Renosterveld is down to five per cent of its original expanse, with only fragments remaining, mainly in the Overberg region of the Western Cape. An emergency response is required to prevent the extinction of this jewel in the Cape Floristic Region: the smallest and richest plant kingdom on earth.

The emergency response started with *Watercourse Restoration in Critically Endangered Renosterveld*, a WWF Nedbank Green Trust-funded project to restore the watercourses that link and feed these fragments, which are the only source of intact biodiversity in the region's farming landscape.

Dr Curtis and her team have now identified ecological corridors in the form of streams, rivers and seepage areas that link the disparate patches of Renosterveld between farms in the Overberg Rûens (wheat belt). These watercourses are the lifeblood of this habitat and the health of the entire region, but many of the watercourses are in a badly degraded state.

'Numerous rivers, streams and wetlands have been invaded by alien vegetation, with advanced soil erosion and water pollution or destruction by ploughing. Restoring these watercourses and assisting landowners in managing them, paves the way for water conservation, ecosystem restoration and better land management in this fragile system,' explains Dr Curtis.

'Partnering with farmers and landowners is the only way in which we can restore the health of the watercourses and defend this unique habitat from an otherwise inevitable extinction. What is so encouraging is how many farmers are interested and on board, and have come to us for advice and help since the project started.'

Part of the success of this project is the manner in which the project manager on the ground, Keir Lynch, engages with farmers and landowners.

'We are currently working with about 50 farmers who are invited to sign a conservation easement or memorandum of understanding with the Overberg Renosterveld Conservation Trust,' says Lynch. 'This is a conservation servitude on their title deed or a written commitment to manage the watercourses and Renosterveld habitat on their land according to the conservation and biodiversity management plan.'

Some of the rare and endemic Renosterveld plant species include:

- *Moraea elegans* – a bulb in the iris family, with a yellow flower and striking green and orange markings;
- *Polhillia curtisiae* – an electric yellow member of the legume family that was named after Dr Curtis who found it in the WWF-owned Haarwegskloof Renosterveld Reserve in the eastern Overberg between Bredasdorp and Swellendam, where the Renosterveld Research Centre and self-catering guesthouse are situated;
- *Hesperantha kiaratayloriae* – a bright pink bulb, found only on two sites on quartz Renosterveld thus far.

'We applaud the farmers who are partnering us in this initiative,' says Dr Curtis. Their farms range from 800 hectares to several thousand hectares and they are under pressure to farm every inch of their land due to the exorbitant cost of production land.

Through this initiative many farmers have stopped ploughing up the Renosterveld remnants and watercourses, and there is encouraging commitment to biodiversity conservation to improve the health and supply of water to this region.

An exciting recent project find has been the discovery of two indigenous fish species – the Cape kurper (*Sanelia capensis*) and Burchell's redfin (*Pseudobarbus burchelli*) in the Hansjes River near the village of Napier. It was previously thought that redfins did not occur in the Renosterveld system.

'We will continue to sample the river systems throughout the project area to determine the distribution of species across the river systems in the Renosterveld,' says Dr Curtis. 'These are fantastic finds in addition to the incredible plant and animal species already recorded in this area.'

Endemic Renosterveld species Polhillia brevicalyx

2020
Seeding Honeybush in the Wild

Honeybush is a fynbos plant that makes a refreshing tea, rich in antioxidants. It has a softer taste than the better-known rooibos tea; some tea connoisseurs like to pair it with rooibos, saying rooibos is more masculine and honeybush more feminine.

Wild honeybush terrain - Tsitsikamma mountains

The Langkloof Valley is a fruit-farming area that extends for many kilometres along the R62 – the inland alternative to the Garden Route – and between the Tsitsikamma and Kouga Mountains, where wild honeybush grows.

However, unlike rooibos, honeybush is difficult to cultivate, and of the approximately 390 tons of honeybush tea produced in the Langkloof Valley every year, 80% is harvested from the wild. This calls for sustainable harvesting, together with holistic management of the Tsitsikamma and Kouga mountain fynbos area in which the harvesting occurs.

'These mountains are the catchments for the Kouga and Krom Rivers and the Kouga and Churchill Dams – strategic water sources for Port Elizabeth – and are critical for both water security and biodiversity in the region,' says Project Manager Liz Metcalfe, who leads the Living Lands five-person Langkloof team. Partnered by the WWF Nedbank Green Trust, the project is focusing on honeybush in a drive to improve veld management by Langkloof farmers in the Tsitsikamma and Kouga mountain areas.

'In early 2020 we started the WWF Nedbank Green Trust project to grow honeybush from seed in the wild in order to augment the resident wild populations,' Metcalfe explains. The most heavily wild-harvested of the 23 honeybush species is *bergtee* or mountain tea (*Cyclopia intermedia*), which requires a recovery time between harvests of approximately four years (under normal climatic conditions, and assuming no veld fires occur). Illegal harvesting and overharvesting reduce the inter-harvest period and ultimately lead to population decline.

'To increase the growth of this species in situ, we will collect *Cyclopia intermedia* seeds from the wild and plant them at five test sites in the mountain fynbos, where we will monitor them over three years to see if this species augmentation experiment has been successful,' says Metcalfe. Honeybush is fire-germinated, which project workers mimic by putting the seeds in boiling water. Seeds from a specific population are planted back in the area of that population to keep the genetics intact.

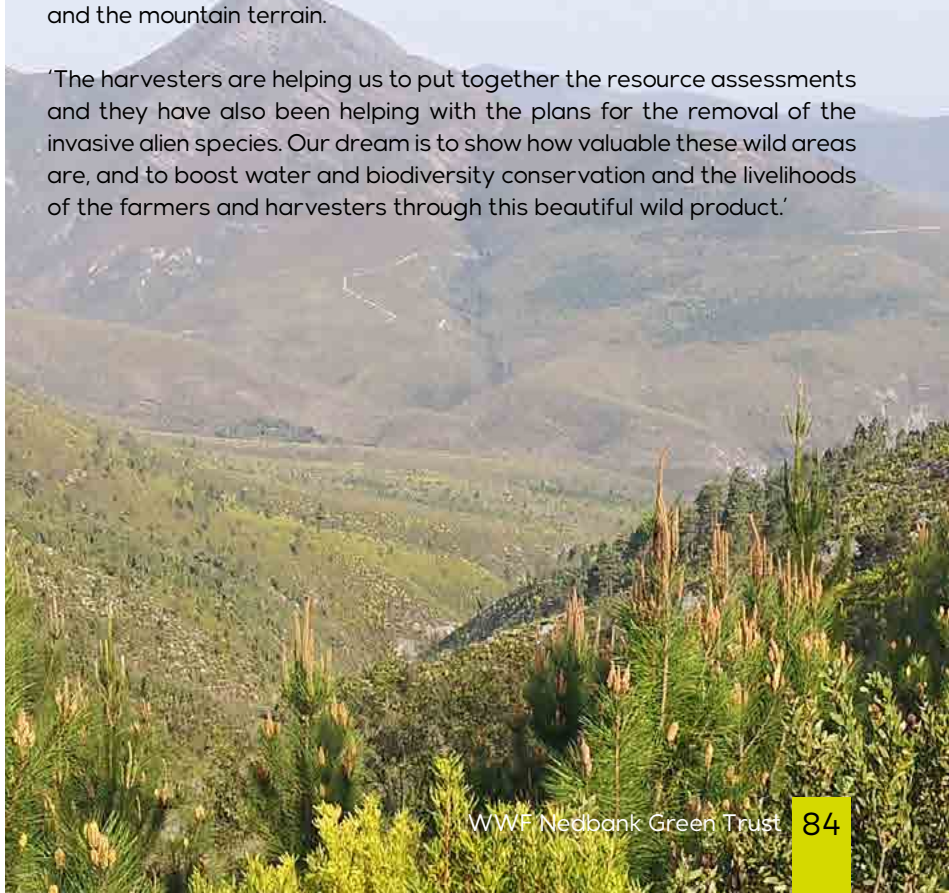
'We value Living Lands' way of working as they have spent three years gaining an understanding of the landscape and the socio-economic and ecological aspects of the local honeybush tea industry in this region,' says Jan Coetzee, Programme Manager of WWF's Land Programme.
'Landscape-wide conservation in South Africa depends on strong partnerships with landowners and we are highly appreciative that Nedbank through the WWF Nedbank Green Trust sees the value in funding this kind of catalytic project.'

By focusing on honeybush and its landscape, the project team aims to increase awareness of and conservation efforts in the Tsitsikamma and Kouga mountains, which are being increasingly infested with invasive alien trees, intensifying fire risks.

'Our approach is that these unique wild areas could be managed so much better and at the same time provide a product, the honeybush, that creates income for the farmers who own the land and income for the harvesters who collect the honeybush in this incredibly rugged terrain. The harshness of the landscape is said to contribute to the tastiness of this tea,' says Metcalfe.

'We are also working closely with the farmers who own the land and with some of the harvesters to develop the sustainable-harvesting plans,' she continues. 'Many of them have been harvesting honeybush for generations and they are exceptionally knowledgeable about the plant and the mountain terrain.

'The harvesters are helping us to put together the resource assessments and they have also been helping with the plans for the removal of the invasive alien species. Our dream is to show how valuable these wild areas are, and to boost water and biodiversity conservation and the livelihoods of the farmers and harvesters through this beautiful wild product.'



2020
SA citizens benefit from biodiversity tax break

'Important collaborative partnerships were vital to one of South Africa's foremost biodiversity finance success stories, which provides urgent sustainable finance to the conservation of South Africa's iconic landscapes.'
— Candice Stevens

Quiver trees, Northern Cape Photo: Peter Chadwick

South Africa achieved a world-first in 2016 with the introduction of a biodiversity tax incentive for private landowners, including communities, who have their land officially declared as a nature reserve in perpetuity in terms of the National Environmental Management: Protected Areas Act (NEMPA), 57 of 2003.

The journey to achieve this biodiversity tax incentive was a major feat. The Fiscal Benefits Project was made possible by seed funding of R3 million from the WWF Nedbank Green Trust from 2015 to 2017, and was accomplished in collaboration with National Treasury, the South African Revenue Service, the Department of Environment, Forestry and Fisheries and the Biodiversity Stewardship community of practice in the public and private sectors.

'The incentive enables taxpayers to claim a tax deduction based on the value of the land declared as a nature reserve,' explains biodiversity finance expert Candice Stevens, who led the project during her time with BirdLife South Africa, in partnership with the South African National Biodiversity Institute. She has since joined Wilderness Foundation Africa (WFA) as head of innovative finance and co-chair of the Sustainable Landscape Finance Coalition with WWF-SA.

The tax incentive is not restricted to large operations. The biodiversity status of the land determines whether it qualifies for nature reserve status and can include anything from threatened grasslands to important water source areas, to landscapes with endemic or critically endangered plants and animals. 'Land declared as a nature reserve can range in size from less than 100 hectares to several thousand hectares, with associated biodiversity tax deductions calculated over 25 years, based on the value of the property,' says Stevens.

Since the introduction of this tax incentive, it has been taken to scale with dozens of landowners and communities, large and small, qualifying for it, including 34 nature reserves with a total of 64 communal and private landowners in KwaZulu-Natal in 2019 alone. Among these are properties that include the headwaters of the uMngeni and uMkomazi rivers, which contribute high-quality water yields to eThekwini and surrounding urban areas.

In the Western Cape three nature reserves vital to the conservation of endemic species became eligible in 2019 for this tax reduction, while several other reserves will become eligible during 2020 and 2021. Engagement with nature reserves in the Northern Cape and Eastern Cape regarding their eligibility have made good progress and are ongoing.

Stevens adds that the R3 million seed funding for this project 'catalysed a national innovation that is creating nationwide benefit, as well as a phenomenal return on investment of more than R100 million from 2015 to 2017. The tax incentive has received international recognition and several awards, with other countries seeking advice from South Africa.'

By paying less tax, additional financial resources can be mobilised to better manage landscapes, including funding for clearing invasive alien plant species, managing water catchments and landscapes, boosting anti-poaching initiatives, contributing to fence and vehicle maintenance, enhancing animal population management and other activities that also boost employment.

Among the first beneficiaries of this tax break was the Manyoni Private Game Reserve in KwaZulu-Natal. At 22 000 hectares, Manyoni Private Game Reserve is one of the largest privately owned reserves in the province. In 2004, 17 owners dropped their fences to create one large protected area.

The owners of Rhino River Lodge, part of Manyoni Private Game Reserve, reported:

> The costs and challenges of protecting the environment have increased dramatically over the last fifteen years. This tax incentive releases funds to further improve our environment for the benefit of all species and create further employment opportunities for the rural communities in our area. Our tax saving is significant and if there is one single motivation for investors in the Wildlife Economy to join the programme, this is it.

In her new role, Candice Stevens is working on additional biodiversity-focused finance mechanisms. It is all about implementing tax mechanisms to help communal and private landowners look after South Africa's precious natural resources; financing solutions for conservation landscapes are urgently needed if we are to address our environmental concerns sustainably and at scale.

2020
Conservation collaboration in the Overberg

The Western Cape's Overberg is home to the Agulhas Biodiversity Initiative (ABI), which involves private landowners and farmers partnering with government and non-profit organisations in a multisectoral conservation drive. In addition to undertaking sustainable farming and fynbos harvesting, they conserve water, protect the natural environment, grow green jobs and create corridors for the movement of wildlife.

Established 15 years ago, ABI now has close to 50 member organisations. In 2020 the WWF Nedbank Green Trust came on board to fund ABI's planning for the next 10 years, including several large landscape issues that will be managed in an integrated way through key projects.

The coordination of ABI is done by the Flower Valley Conservation Trust, established in 1999 and funded by the Global Environment Facility to promote sustainable land use and fynbos harvesting in the region.

Flower Valley's Executive Director, Lesley Richardson, says that ABI has made considerable inroads over the past 15 years in its efforts to:

- manage the natural capital by, for example, promoting the sustainable harvesting of fynbos in the vulnerable Cape Floral Kingdom across 75 000 ha and keeping alien invasives at bay across 45 000 ha;
- enhance the social capital and the well-being of local communities through partnerships, cooperation, skills and education; and
- grow the financial capital by raising the funds needed to develop and sustain ABI, grow the green economy and increase green jobs.

'It's a very exciting initiative as it takes cross-sectoral collaboration to the scale required to manage large landscapes and partnerships collectively. This is what is required for sustainable land management in South Africa.'
—Jan Coetzee WWF-SA Land Programme Manager

One of ABI's major programmes is the Greater Overberg Fire Protection Association (goFPA), established in 2015. 'Its aim is to support landowners to work together to manage and control wildfires cost-effectively,' Richardson explains. 'Approximately 60% of the ±800 landowners in the Overberg have joined the goFPA and the aim is to increase this. Many are also working to reduce the fuel load through clearing alien invasives.'

A further project in the 2020 to 2030 phase is to upscale the removal and management of invasive alien vegetation. Flower Valley's natural resource management programme manager, Kirsten Watson explains, 'The Flower Valley Conservation Trust is the implementing entity for the ABI Alien Clearing Project and has been working with nine land user groups since 2013 towards the control of alien species. As a collective, we have cleared 44 706 ha of alien species and provided employment for 12 contracting teams from rural and semi-rural communities. This scale of success is possible only through partnerships like ABI.'

ABI's future plans will need to bring together social, cultural, political, economic and environmental needs and opportunities. Media and communication and environmental education campaigns will be key. ABI is looking at scaling up its two decades of work in early-childhood development as one of many long-term initiatives required to break the cycle of poverty in the Overberg, where unemployment prior to Covid-19 was already at 14%.

One of ABI's close partnerships is with SANParks, which wanted to increase the boundary of the Agulhas National Park (ANP) to conserve the vulnerable lowland fynbos. However, it was simply not viable for SANParks to keep buying up land, and neighbouring landowners who have been farming there for many years had already started their own conservation activities. Together with SANParks and other ABI partners the decision was taken to partner in conserving and managing the land collaboratively with the farmers.

This led to the formation of the Nuwejaars Wetlands Special Management Area (NWSMA), which over the years expanded to include 46 000 ha of privately owned land that now forms the northern boundary of the ANP. It includes the Nuwejaars wetlands and extends all the way to the Napier–Bredasdorp Mountains, creating wildlife corridors between the coast and the mountains. The NWSMA and the ANP are situated within the BirdLife SA Agulhas Plain–Heuningnes Estuary Important Bird and Biodiversity Area and provide sustenance and refuge for the large numbers of birds and mammals that use this habitat.

One of the driving forces in the NWSMA and ABI, farmer Mick D'Alton, says: 'The Nuwejaars River and associated wetlands play a significant role in supplementing the underground water systems that feed Struisbaai and Agulhas and flow into the De Mond estuary, an international Ramsar site. The wetlands provide a large number of ecosystem services in the form of carbon storing, water purifying and flow control.'

He explains the importance of ABI: 'Because of the changing weather patterns and economic climate, many landowners across the Overberg were overharvesting the fynbos and overutilising their natural areas, resulting in degradation. Those who were trying to practise good natural resource management were doing it in all sorts of ways, depending on budgets and priorities. This resulted in a very fragmented and unsatisfactory situation, with the different systems stopping at cadastral borders.'

He says the establishment of ABI and the process to ensure its continuation for the next 10 years is the best possible solution. Through this, members can collaborate on projects at scale in a strategic manner, and have a far better vehicle for raising funds and support than if they try to go it alone.

2020
A world leader in Key Biodiversity Areas

In 2016 the global conservation community developed a globally recognised standard to identify Key Biodiversity Areas (KBAs) – the most important sites for biodiversity globally. The standard sets out criteria for the recognition of sites that contribute significantly to the global persistence of diversity in terrestrial, freshwater and marine ecosystems.

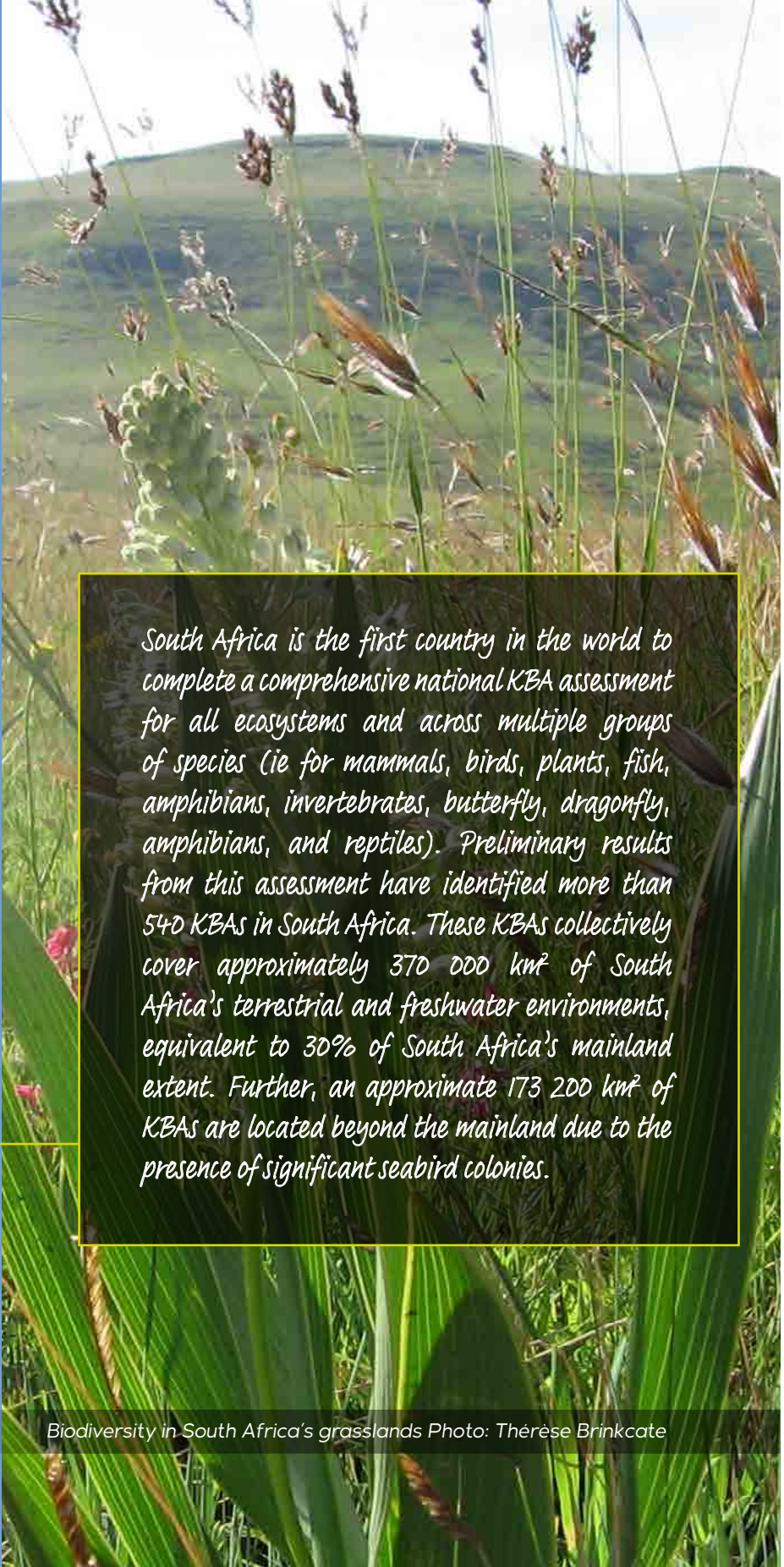
In 2019/20, South Africa became the first mega diverse country to practically test the KBA standard across a full range of species groups and ecosystems. This global standard and its practical application will be vital at a time when the world, through the international Convention on Biological Diversity (CBD), is deliberating a new plan for nature – the Global Biodiversity Framework 2020–2030.

Leading the initiative are 13 of the largest conservation organisations worldwide, including WWF, the International Union for Conservation of Nature (IUCN), Birdlife International and Conservation International.

'The KBA Standard provides clear global guidance on where conservation efforts should be focused, including for international financial investments, protected area establishment and avoiding further loss of important biodiversity,' says Daniel Marnewick, the KBA Community Africa Representative and Manager of the Regional Conservation Programme at BirdLife South Africa.

South Africa's large number of sites qualifying as global Key Biodiversity Areas (KBAs), highlights our incredible biodiversity wealth.

The endangered Cape vulture, southern Africa's only endemic vulture species Photo: Albert Froneman



South Africa is the first country in the world to complete a comprehensive national KBA assessment for all ecosystems and across multiple groups of species (ie for mammals, birds, plants, fish, amphibians, invertebrates, butterfly, dragonfly, amphibians, and reptiles). Preliminary results from this assessment have identified more than 540 KBAs in South Africa. These KBAs collectively cover approximately 370 000 km² of South Africa's terrestrial and freshwater environments, equivalent to 30% of South Africa's mainland extent. Further, an approximate 173 200 km² of KBAs are located beyond the mainland due to the presence of significant seabird colonies.

Biodiversity in South Africa's grasslands Photo: Thérèse Brinkcate

In 2018 BirdLife South Africa and the South African National Biodiversity Institute (SANBI) partnered to initiate a KBA process in South Africa. The partnership's first output was the establishment of a KBA National Coordination Group (NCG), which BirdLife South Africa and SANBI co-chair. Other members of the NCG include the Department of Environment, Forestry and Fisheries (DEFF), WWF-SA, the Endangered Wildlife Trust, and other species and ecosystems experts and leaders in biodiversity spatial prioritisation.

The NCG commissioned the national KBA assessment, which was undertaken by leading biodiversity planners to identify South Africa's comprehensive network of KBAs. The final step in the process is for the NCG to invite input from key stakeholders and then submit the proposed KBA network to the KBA Secretariat in Cambridge, UK, for final approval and inclusion in the World Database of Key Biodiversity Areas, aiming for early 2021.

'We have been in the fortunate position of being able to draw on a massive amount of data from SANBI's National Biodiversity Assessment, and data from other partners, including NGOs and universities, to assess sites as KBAs for a number of different ecosystems and species,' Marnewick says. The KBA assessment was an inclusive process, with input from national stakeholders and the global KBA partnership.

'The large number of South African sites qualifying as global KBAs highlights our country's incredible biodiversity wealth, using a standardised global currency, so to speak. KBAs will support South Africa's reporting to the international community on the uniqueness of our biodiversity and its potential to contribute to the country's development. This network can now complement the existing national spatial biodiversity prioritisation, in which South Africa is a global leader.'

The WWF Nedbank Green Trust and SANBI funded the national process to identify South Africa's KBA network. The WWF Nedbank Green Trust funding also supports Marnewick's national role in leading this process and his regional support role in Africa as the KBA Community Chair and African representative.

'The fynbos biome in the Western Cape is a good example of where we have identified a multitude of sites that meet the global criteria to qualify as KBAs, as it has so many threatened and endemic species (ie species that occur nowhere else in the world),' says Marnewick. 'Another KBA is the area containing the last remaining patches of mistbelt grasslands in KwaZulu-Natal. These are key grasslands and form part of South Africa's Strategic Water Source Areas, as well as holding several threated species such as the blue swallow and the oribi antelope. Preliminary results from the identification of KBAs show that 92% of South Africa's existing protected area network incorporates KBAs, confirming that national parks, nature reserves and other protected areas play a key role in protecting South Africa's globally significant biodiversity assets.

South Africa is a world leader in systematic biodiversity planning, as well as other area-based recognitions for important sites, such as Important Bird and Biodiversity Areas (IBAs). What the new KBA network does is to complement nationally identified biodiversity priority areas, such as Critical Biodiversity Areas and Freshwater Ecosystem Priority Areas, with a globally recognised network of sites, which will help motivate for and direct international financial investments and conservation efforts into landscape conservation.

In many other African countries advanced conservation and spatial planning programmes do not exist, and areas that could qualify as KBAs have not been identified. 'South Africa has assumed a regional responsibility to support the biodiversity assessment process in African countries, and we are currently working with a number of African countries to identify threatened species and ecosystems, which they can then use to identify their KBAs,' says Marnewick. 'Part of the objective is also to work with local NGOs and experts in these countries to develop local capacity and skills to identify and manage KBAs.'

Babanango Game Reserve with the White iMfolozi River Photo Chris Galliers

Marnewick has supported several African and non-African countries with the establishment of their KBA programmes, primarily through advising on how to establish NCGs. These countries include Madagascar, Mozambique, Malawi, Zambia, Botswana, Zimbabwe, Canada, Nigeria, Australia, Kenya, and Greece. In his role as the KBA Community Africa Representative, he is currently reviewing the 38 KBA proposals being submitted by Mozambique.

How well we safeguard our KBAs is directly related to how well we conserve the vital biodiversity assets and ecosystem services that sustain every person on this planet, such as healthy air and water. 'Safeguarding our KBAs in South Africa will contribute to global conservation efforts and help to communicate these contributions, as will be the case for other countries that are signatories to the Convention on Biological Diversity,' adds Marnewick.

'A robust network of KBAs gives us traction to lobby for the protection of these sites on a global scale, and to be able to apply for support from global funders and NGOs who want to focus their resources on KBAs. If all countries can safeguard the most important sites for biodiversity, then we will begin reversing the decline of biodiversity and seeing natural areas recover and persist.'

Photo on the right: uKhahlamba Drakensberg Park Photo: Albert Froneman

FOOD

Photo: WWF-SA

FOOD INSIGHT

Tatjana von Bormann, Impact Lead, WWF-SA

The launch of the Sustainable Development Goals in 2015 heralded a new understanding of the ways in which inclusivity and social equity are deeply intertwined and dependent on a flourishing environment. WWF-SA and the WWF Nedbank Green Trust has moved in lockstep with this global trend, adopting a more systems oriented understanding of the actions necessary to resolve the most pressing environmental and social problems.

In our food systems work this principle of interconnectedness recognises that the very factors that deplete and degrade our environmental resources are the same forces that deprive people of their livelihoods and cause the cultural and familial underpinnings of the social fabric to fray and collapse. Our work remains grounded in the need to address the areas of significant environmental impacts, namely those that occurred within production land- and seascapes, but our approach has changed. The effort to sustainably produce food is now informed by our understanding of the structural changes needed to accommodate the many other aspects including creating livelihoods, labour, social protection and environmental and human health.

A shift towards taking a food systems approach – where what is being produced and who is buying it, is coupled with a multiplicity of social and environmental challenges and the interlinked ecosystem of landscapes, producers, markets, regulators, behaviours, technologies and consumption – has increased the complexity of the work but allows us to consider interconnections and feedback loops, and avoid unintended consequences in our interventions. Within this complex view, WWF-SA and the WWF Nedbank Green Trust are supporting six areas of focus: optimal and efficient water use; regenerative farming practices; regenerative use of ocean resources; responsible food sourcing, reducing food loss and waste; and sustainable diets.

What is so important here is the recognition of regenerative practices, namely actions that positively transform ecological and social dynamics, not just halting environmental degradation but actually restoring natural functions, creating a system that gives more than it takes. The next era of food production and consumption must be built on an agroecological approach that rights our relationship to nature, regenerates fertile soils, produces nutritious food, abundant water sources and healthier people.

The socio-ecological lens is not confined to small-scale production and local supply chains but is also our approach to working with large-scale food production processes. The underlying premise is the same, to achieve lower carbon, climate-resilient food production, and to work on systems that can reduce loss and waste in partnership with NGOs, government departments and business, which brings a strength to it.

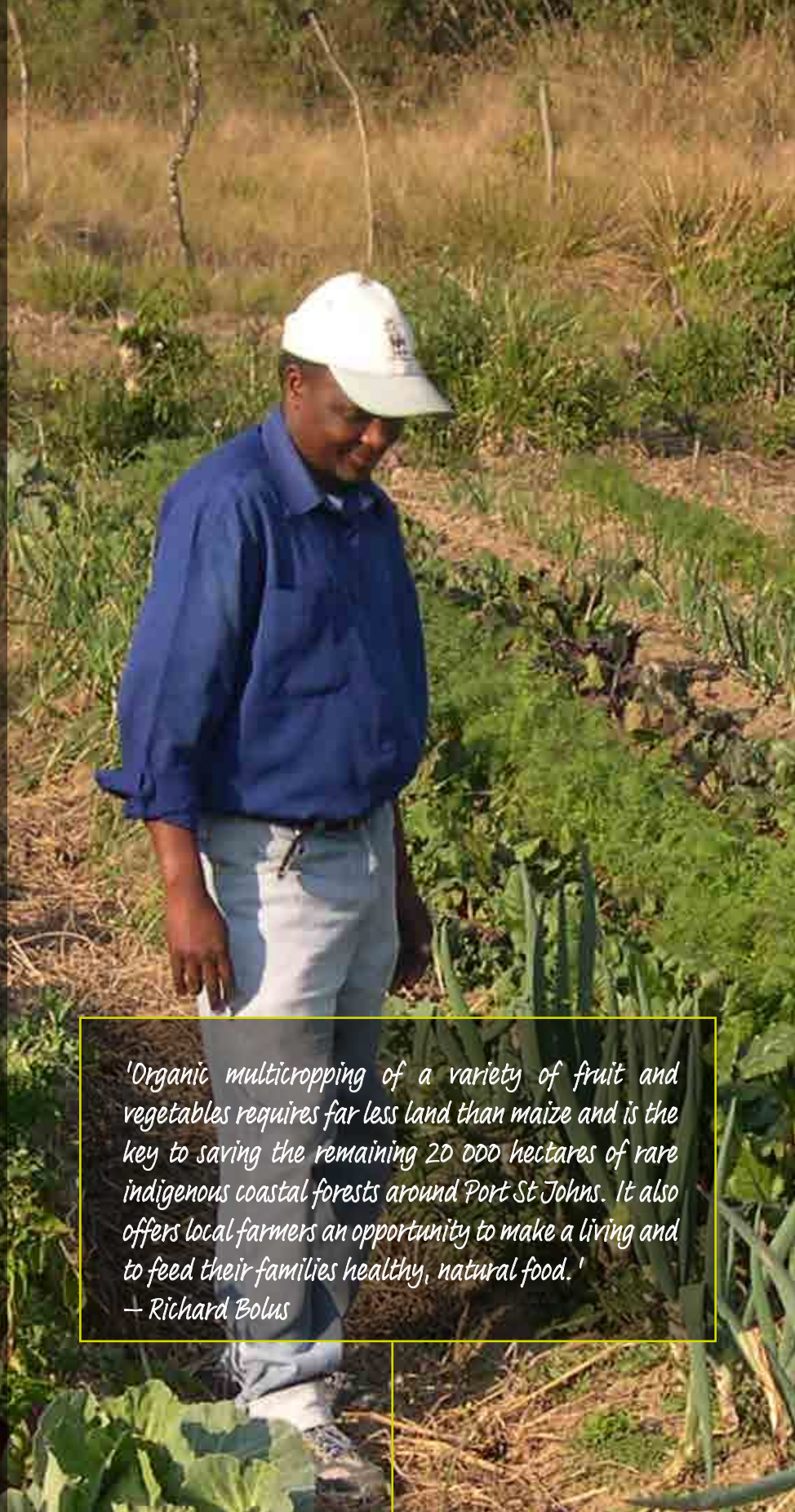
This year, the Covid-19 pandemic has exposed just how inadequate our management of food sources is, where people's health and well-being is on the line because they have been marginalised in the economic system, with tenuous access to food and clean water. Our work aims to be part of the groundswell towards a just transition of the food system that addresses South Africa's extraordinary levels of poverty; it requires an understanding of nutrition and taking a full systems view of the need for easy access to healthy, fresh food in all our communities.

2001 – 2007
Master farmers organic triumph

From the day it was founded in 1990, the WWF Nedbank Green Trust saw the future and started supporting organic, wildlife-friendly farming projects. Today, the focus on wholesome, natural farming (agroecology) that keeps humans healthy and at the same time conserves the environment, is recognised as being critical to the survival of our planet.

Amongst the first WWF Nedbank Green Trust-sponsored organic farming projects was Master Farmers, established around Port St Johns, in the Pondoland region of the Eastern Cape. Its aim, under the leadership of Richard Bolus and senior field worker, Mbulelo Maqhanqa, was to convert local farmers to organic multicropping. At the start of the project most farmers in the region were solely growing maize.

'We needed to approach conservation from a practical, economic perspective in this area,' explains Bolus. 'The population we are targeting – about 160 000 people in villages along the Port St John coastline – is rapidly expanding, which means increasing pressure on the forests, with large tracts being cleared. Through practical demonstrations, we showed the resident communities that the forest soil is not meant for maize and after the third year it is no longer fertile.'



'Organic multicropping of a variety of fruit and vegetables requires far less land than maize and is the key to saving the remaining 20 000 hectares of rare indigenous coastal forests around Port St Johns. It also offers local farmers an opportunity to make a living and to feed their families healthy, natural food.'
– Richard Bolus

Farmer Mr Dyani and Mbulelo Maqhanqa

'It took a while to build trust in the community, negotiate with the chiefs and gradually introduce alternatives,' says Maqhanqa. The project led to over 100 farmers successfully intercropping a variety of organically grown subtropical fruit and vegetables outside the forests in the Port St Johns region.

> *'People are positive when they see the fruits of their labour and are able to support their families by selling their fresh produce at the local markets,' says Maqhanqa.*

The initiative also focused on coastal forest restoration, monitoring and education projects. The forests feature 120 species of trees and hundreds of plants, many endemic to Pondoland, including the Pondoland palm and several orchid species. The region is unique because it combines the eastern limits of the Fynbos Biome with the subtropics.

2004 – 2010
SA's seafood consumers are the heroes

'Congratulations to South Africa's seafood consumers. By insisting on sustainably harvested fish and seafood you are significantly driving change.' This is the message from Dr Samantha Petersen, project manager of the WWF Nedbank Green Trust-supported Sustainable Fisheries Programme.

'Through consumers making informed and eco-friendly seafood choices they are supporting responsible fisheries and creating an incentive for other less eco-friendly fishing methods to change,' says Petersen.

'More than ever we need consumers to keep asking restaurants and supermarkets whether they are serving or selling sustainably harvested fish and seafood. It has an impact along the entire seafood chain – from the fishermen's hooks all the way to the final product delivered to the supermarkets and restaurants.'

For example, kingklip – a favourite species for diners – was in danger of collapse several years back. Catch limits were introduced and the kingklip's spawning ground – some 50 nautical miles (100 kilometres) offshore from Port Elizabeth – was declared off limits. The result is that kingklip today is in a far healthier state.

The power of the consumer in the seafood chain began to be demonstrated when SASSI (Southern African Sustainable Seafood Initiative) pioneered by SANBI's Marine Programme Manager, Dr Kerry Sink, was launched in 2004.

'We originally approached the seafood wholesalers and retailers of linefish and seafood and explained our drive to encourage consumers to purchase non-threatened – or green-listed – fish species so that the orange- and red-listed populations (overexploited or illegal species) could recover,' Petersen explains. The response we got from the industry was that consumers don't care what they eat. This led us to focus the campaign on consumers first. It was the best approach we could have taken,'.

Tens of thousands of seafood consumers throughout South Africa started asking all the right questions, assisted by SASSI's innovative wallet-size guide and FishMS service, which provides instant information on the status of each species via SMS.

Wholesalers and retailers responded positively to consumer pressure and an increasing number are actively engaging with the Sustainable Fisheries Programme.

The programme is currently working with several of the biggest seafood suppliers in South Africa, as well as the big retail and restaurant chains, and offshore and inshore commercial industry players.

'These companies are part of the Responsible Fisheries Alliance (RFA) established between the WWF-SA, the WWF Nedbank Green Trust and the fisheries industry. One of the challenges the RFA is working towards resolving is the current lack of regulations addressing the by-catch of over-exploited linefish species, including Cape salmon (geelbek) and kob (kabeljou) caught by the inshore trawl sector. Many of these species are the mainstay of rural fishing communities.

Petersen regularly engages with fishers and skippers who all confirm that there are no longer enough fish in the sea, that the fish are significantly smaller and that they are catching less and less with the same effort.

'Research has also identified some concerning findings. For example, there is some indication that certain species are breeding faster or at a younger age – which is an evolutionary response when populations are under threat.'

'The good news is that it's not too late. If we act now, we can reverse the situation and reduce the impacts of destructive fishing practices. All we need to do is upscale the questions about our seafood. Most importantly we should be asking three questions: What is it? Where is it from? How is it caught?

'Empowered with this information, consumers can make an informed choice and drive the change we need to save our marine life.'

2011 – 2017
Securing the future of SA's fruit industry

'Since 2011 the WWF Sustainable Fruit Initiative has collaborated with the Sustainability Initiative of South Africa through Fruit South Africa (the fruit industries' umbrella organisation) to bring together South Africa's export fruit growers under one body, based on internationally benchmarked social, ethical and environmental principles.'
– Shelly Fuller

One of the WWF Nedbank Green Trust's strengths over the past 30 years has been its foresight in funding projects in the early stages of their development. This catalytic support, mostly done behind the scenes, is critical for the development of the sustainability roadmap required for all sectors of South African society. One example is WWF-SA's Sustainable Fruit Initiative.

This initiative focuses on the environmental challenges of achieving climate-resilient fruit production in the Western Cape, and on extending the landowner biodiversity stewardship programme in the globally important Cape Floral Kingdom, where the majority of South Africa's fruit and wine producers are situated.

'Water availability has been identified as an enormous risk in South Africa, exacerbated by prolonged drought. The Western Cape is also experiencing unseasonal summer rain that falls too intensely over short periods, instead of the characteristic soaking winter rains over longer periods,' says Shelly Fuller, WWF-SA's Sustainable Fruit and Wine Programme Manager.

In the Ceres area, for example, increasing vulnerability to water risks (physical scarcity or water quality concerns) are being monitored carefully and a coalition of growers is working closely on collective catchment-wide action to manage and address these challenges.

Fuller offers the example of the Palmiet River catchment area of the Elgin–Grabouw region, where wine and fruit farmers typically export 60% to 70% of their produce. Many producers already have high standards of alien plant clearing, restoration of riverbanks and good water management on their farms. 'But much of their hard work comes to nothing if the municipal water and waste systems are not well managed, with poor quality water threatening exports, as it is used throughout the production process – for irrigation, packaging and bottling.'

She continues, 'Wine and fruit exporters have to comply with the stringent international food safety certifications, all of which include strictly monitored food health and safety, social and environmental regulations.

'If these certifiers carry out tests in an area and find *E. coli* in the water because sewerage hasn't been properly managed or because raw sewage is flowing into the rivers, it directly threatens the farmers' export market. At the same time it threatens the health of the people living in this region and it threatens the sustainability of the water supply.'

To improve and standardise the social and ethical side of the South African fruit industry, which is also a requirement of the international certifiers, the Sustainability Initiative of South Africa been working with the fruit industry and retailers for several years. Together with WWF-SA's Sustainable Fruit Initiative they are working hard to show measured improvements against key social and environmental indicators.

Another significant issue is the climate-related impact on the yield in the stone fruit sector (peaches, apricots, plums, nectarines) of the Little Karoo (from Worcester to Robertson to Oudtshoorn), where growers are having to invest heavily in shade netting to protect their crops from increasing wind and hail occurrences during harvest season.

'The lack of rain, the type of rain or the ability to predict when and how it is going to fall is a major area of concern that is not going away,' says Fuller. 'The drought that began in 2015/16 is a case in point, causing major setbacks for many of the fruit and wine producers. Farms that manage their water use efficiently, control their invasive alien trees and enhance the soil health, have demonstrated a much higher coping capacity during this time and we work with farmers to achieve this.'

2017
Agroecology for small-scale farmers

'This training is part of our broader goal to develop a significant number of small-scale or smallholder farmers throughout South Africa,' Silandela explains.

Between Johannesburg's inner city and Soweto is the 17 Shaft Centre Leadership and Agroecology project. Here, teams of smallholders – from the urban heartland of Soweto to the rural reaches of Limpopo – are learning how to create rich, nutritious soil to grow expanses of fresh produce. The results speak for themselves: magnificent, insecticide-free crops of spinach, carrots, cabbages, tomatoes, beans and pumpkins – all mainstay vegetables in the majority of South Africans' diet.

'These men and women are part of a smallholder farmer training programme, created by the 17 Shaft Education and Conference Centre in partnership with the Southern African Food Lab and WWF-SA, with funding from the WWF Nedbank Green Trust,' says Mkhululi Silandela, WWF-SA's Programme Manager for the WWF Nedbank Green Trust's Mainstreaming Sustainable Small-scale Producers project.

The trainees live on site for three months at 17 Shaft's conference accommodation and learn agroecology farming practices as well as gaining leadership and management skills.

The project is tangibly contributing to sustainable food production and a more inclusive future for rural and marginalised people in South Africa in this time of climate change.

Agroecology, as Silandela explains, is a global movement centred on natural, holistic farming methods that exclude the use of chemicals. For example, diversified crop rotation is used to improve soil health, and nutrients in the soil are retained through organic mulching, with no tilling or low tilling, as this destroys the structure of the soil. Healthy soil and soil cover enhance water retention and ultimately increases productivity. At the same time this method reduces negative farming impacts such as erosion or pollution from chemical fertilisers, a significant issue in South Africa's rivers.

A key requirement in the selection of the trainees is that they will take what they have learnt back to their communities to develop smallholder food farms or food gardens there, and help others to do the same.

'From 2018 we'll be introducing a more viable model for the training, which could be done in urban and rural communities with a range of grassroots organisations. We will also be developing a monitoring and evaluation system to track the sustainability and growth of the project,' says Silandela. At the same time the project is also working with partners such as the Dutch NGO Solidaridad to co-establish a market access platform with smallholder farmers who commit to adopting sustainable and climate-smart agricultural practices. To achieve this, partnerships have been created with the formal sector, particularly the food retailers. The SPAR Group, for example, is creating decentralised fresh produce hubs in designated rural areas in South Africa, such as in the Mopani district in Limpopo, to boost smallholder farmers and benefit local consumers.

'Sustainability of supply is key, and agroecological farming practices are a strategic intervention in the context of the increasing periods of drought we are experiencing in South Africa,' Silandela explains. 'With soil and water stewardship at the heart of this type of farming, it is showing encouraging results for buffering crops against droughts, reducing vulnerability and crop losses, and enhancing livelihoods through sustainability of supply.'

2019
Growth of South African game meat

Babanango Game Reserve (BGR) was established on land successfully claimed by the Emcakwini community. 'We opened to tourism in 2019, and the possible establishment of an abattoir and retail market would strongly contribute to our sustainability and that of other nearby reserves,' says Musa Mbatha, the General Manager of BGR.

Nyala Photo: Angus Burns

South Africa's game meat market has considerable growth potential if it is developed responsibly. It is compatible with biodiversity conservation and can contribute to rural economic development, job creation and food security.

The WWF Nedbank Green Trust is funding Conservation Outcomes, a KwaZulu-Natal-based non-profit organisation focused on biodiversity conservation, to develop the game meat protocol and demonstration projects in partnership with game reserves and the retail industry

Leading the project is Greg Martindale, Director of Conservation Outcomes: 'We are focusing on extensive private, state- and community-owned game reserves, including Kruger National Park (KNP) and the Great Limpopo Transfrontier Conservation Area. In northern KwaZulu-Natal we are working with community- and privately-owned reserves such as Phinda, Somkhanda and the recently opened Babanango to determine the viability of setting up an abattoir in Phinda. It goes without saying that we strictly adhere to legislation and veterinary and health protocols, to ensure the meat is safe to eat.'

A number of successful on-reserve game meat abattoirs already exist, and the project team is engaging with them. 'We have engaged with Pongola Game Reserve to explore collaborating in increasing the region's game meat production, with the aim of collectively supplying large retail chains such as Checkers and Spar, which are looking at developing specific game meat products.'

Another significant part of the project is the work that Conservation Outcomes has been doing with SANParks since 2018 for the revival of its registered abattoir at Skukuza, KNP.

'The short-term aim is to get the Skukuza abattoir operational again, and the longer-term aim is to establish a game meat market under the auspices of the Great Limpopo Transfrontier Conservation Area Cooperative Agreement, incorporating other game meat abattoirs in the greater Kruger system.'
– Greg Martindale.

The Skukuza abattoir project has shown there is a significant game meat market in the greater Kruger area. While Covid-19 destroyed tourism in 2020, in a normal year KNP receives over 1,5 million visitors, and significant volumes of game meat are sold at its shops, restaurants and lodges. None of the game meat currently sold originates from the greater KNP because the Skukuza abattoir is not properly operational. 'Once it is operational again, the abattoir can contribute profits to the greater KNP and 16 of the KNP claim communities, as well as supplying them with affordable meat,' says Martindale, adding that, in time, the model could be replicated in all provinces.

2020
Food focus on informal settlements

for the transformation of the local food system in informal settlements. This includes improving food security by increasing the capacity to produce food locally, and distribute and sell it locally.In the greater Durban eThekwini area, for example, of the approximately 200 000 households in over 300 informal settlements, 39% of the inhabitants suffer from hunger as there are very high levels of unemployment. A WWF Nedbank Green Trust project that will run from 2020 to 2022 is piloting systems to address these challenges in a number of informal settlements in this area.

The project's focus is to promote healthy food environments underpinned by agroecological farming in informal settlements. Agroecology is mixed farming (livestock, crops and vegetables) practised in harmony with the natural environment and includes the economic use of water and enrichment of the soil without fertilisers. Called Woza Nami ('come with me'), the project is funded by Nedbank, SPAR and the DG Murray Trust, in partnership with eThekwini Municipality, the Southern Africa Food Lab, a number of universities, and businesses.

'You cannot undertake a project like this without a willing municipality and we have found one in eThekwini,' explains Tatjana von Bormann, Programme Impact Lead at WWF-SA, who is leading the project together with WWF-SA Programme Manager Louise Scholtz and Project Coordinator Innocentia Modau.

'Unequalled in South Africa, the municipality's Resilience Strategy includes seven agroecological hubs that have been created in informal settlements, and farmed by local smallholder farmers. Thirty-seven of these farmers are supplying vegetables to local school feeding schemes and hospitals. The WWF Nedbank Green Trust project will focus on two of the hubs (potentially uMbumbulu and Newlands-KwaMashu) to see how they can connect more closely with households in their neighbouring communities.

'The Newlands-Mashu Permaculture Centre, for example, is a permaculture demonstration and learning site, which has the potential to grow and sell fresh produce to increased numbers of informal traders in the neighbouring communities. This requires better logistical and distribution management, and encouraging a local, healthy food supply,' says Von Bormann. In parallel with the farming project, the Woza Nami team will engage with informal settlement community members in knowledge and information sharing about nutritious food. Von Bormann says: 'A wide range of research confirms that the diet in most financially stressed households is high in starch, mainly pap, with not many vegetables or fruit and with very little protein.

Smallholder vegetable farmer Photo: Paul Weinberg

'Demand towards refined grain staples and unhealthy packaged ready-made food is a consistent feature of urbanisation and per capita income growth. These foods are generally cheaper, more readily available and require less energy to store and prepare. They are also marketed heavily so many have become aspirational choices.'

The Covid-19 pandemic has highlighted the need, which is greater than ever, for people to include healthy, super-fresh foods in their diet, where you walk to the corner and buy vegetables grown in your own community. In so doing, you contribute to local economic development, which helps the economic health of the community. Such a shift can only happen if the food production systems change to healthy, sustainable food environments, underpinned by agroecological farming.'

Modau explains that in the rural areas, 'homegrown vegetables and some protein from smallholder livestock are still part of the diet, as are highly nutritious wild crops and vegetables such as the green leafy amaranth, root vegetables like amadumbe (similar to a potato) and bambara groundnuts, which are part of the Zulu people's traditional diet. These crops grow wild, can survive with less water, cope with extreme heat, do not require fertiliser and have a low carbon footprint.'

Part of the Woza Nami project will be to investigate the potential to cultivate and popularise indigenous wild crops and vegetables in the informal settlement farms.

'One of the likely impacts of the Covid-19 food crisis is that supply chains will become more domestic,' explains Von Bormann. 'Globalisation may have brought us economic growth, but it has not necessarily helped to build national security in key resources. There is also a rising distrust of distant sources of supply – concerns about the virus being picked up on samples of Brazilian chicken wings or their packaging is one example. Woza Nami will collaborate with other efforts in the region to ensure that people are able to access not only nutritious food but also safe food, farmed in safe environments. 'We are looking to double the impact and dramatically scale the project in collaboration with a GIZ-funded project with overlapping objectives in the eThekwini and neighbouring iLembe district municipality. The WWF Nedbank Green Trust has since provided additional funding to take the project to other provinces.'

Woza Nami's predecessor, the South African Resource Smart Food Systems Project, also funded by the WWF Nedbank Green Trust, ran from March 2017 to December 2019, and was led by Von Bormann.

The project worked on key solutions to food production and distribution issues, including solving the problem of vast amounts of food wastage and loss; implementing sustainable, climate-resilient agriculture (including water conservation); expanding renewable energy in agriculture; growing the number of smallholder farmers in urban and rural areas; and addressing the role of unhealthy foods in triggering non-communicable diseases, which pose a major health risk to our population.

The Smart Food Systems project was about understanding where best to tackle the system for sustainable transformative change. The learning from this project is being applied in the Woza Nami project.

Photo: WWF-SA

WILDLIFE

Photo: Peter Chadwick

WILDLIFE INSIGHT

Dr Jo Shaw,
Senior Manager:
Wildlife Programme / Africa Rhino Lead

Globally, we are becoming increasingly aware of the fact that biodiversity – the rich diversity of life on Earth – is being lost at an alarming rate, to the extent that many scientists believe we are witnessing a sixth mass extinction event. The 2020 WWF Living Planet Index shows a 68% decline in the population sizes of vertebrate species around the world between 1970 and 2020.

Degradation and loss of habitat are the greatest threats to terrestrial and marine species, followed by overexploitation, often driven by the demand for wildlife, their parts and products, and exacerbated by climate change. Illegal wildlife trade is a significant threat, compounded by the growing involvement of organised criminal networks; worldwide it is currently the fourth most lucrative form of transnational crime.

Achieving wildlife sustainability is complex, and requires solutions that meet the needs of both people and wildlife. WWF and the WWF Nedbank Green Trust's work extends far beyond the boundaries of protected areas and lies in addressing social and economic sustainability issues as well as environmental challenges.

Over the last 30 years the WWF Nedbank Green Trust has made wide-reaching contributions to biodiversity conservation and protecting the future of our wildlife by supporting a science-based approach to species conservation, and engaging and supporting skills development in community-based conservation. One of the benefits of the WWF Nedbank Green Trust approach is that it recognises the need to bring holistic solutions to species conservation. Species cannot be viewed in isolation, as each plays a vital role in connecting and connected ecosystems. They are all indicators of the health of the processes which sustain life on Earth and support socio-economic activities and human well-being.

Conservation efforts also cannot be viewed in isolation: to achieve wildlife conservation and reduce biodiversity loss we must work together with scientists, citizens, business, higher education institutions, government and non-government organisations. We must increasingly bring a multifactor, multidisciplinary and multinational mindset to species conservation and how we think about our natural resources, our protected areas, our wildlife and our people. We applaud the WWF Nedbank Green Trust for their commitment to sustainable conservation over three decades and for their visionary contribution.

1991 – 2009
TRAFFIC

CITES, or the Convention on International Trade in Endangered Species of Wild Fauna and Flora, is an international agreement between governments, aimed at ensuring that international trade in wild animals and plants does not threaten their survival.

Rhino horn and elephant ivory Photo: Peter Chadwick

The WWF Nedbank Green Trust looks back with pride at the part it has played in sponsoring TRAFFIC East and southern Africa.

TRAFFIC is an international organisation dedicated to monitoring wildlife trade and providing essential information to wildlife authorities, including trade dynamics, malpractice and policy. In 1991 it established a regional office for southern and East Africa in Johannesburg, and received catalytic funding from the WWF Nedbank Green Trust.

'South Africa over the years has been seen as a bit of a lawless country in all aspects of wildlife trade, including birds, plants, elephant ivory and rhino horn,' says, TRAFFIC Southern Africa Director, David Newton. 'We started investigating what was going on in our wildlife trade; it revealed very serious transgressions and unmanaged trade in everything from African grey parrots and cheetahs to a wide variety of plants (such as cycads and succulents) to elephant ivory and rhino horn.'

In 1996, TRAFFIC's report, South Africa's Wildlife Trade at the Crossroads, detailed how South African wildlife legislation, administration and law enforcement were not working. Building on the momentum, TRAFFIC put together The South African CITES Implementation Programme. This led to an improvement in wildlife management legislation in the form of the National Environmental Management: Biodiversity Act, 2004, (NEMBA) amended in 2014 to conform to CITES stipulations.

TRAFFIC then developed and rolled out a law compliance, training and species identification programme in Limpopo, KwaZulu-Natal and the Eastern Cape, to help conservation officials, municipal authorities and prosecutors to implement NEMBA, which significantly raised TRAFFIC's profile in the environmental sector.

DEAT contracted TRAFFIC and the University of Pretoria to develop the skills training process for the Environmental Management Inspectorate – more popularly known as the 'Green Scorpions'. The course was formally accredited at honours degree level at the University of Pretoria, and was subsequently also offered by Unisa and the Cape Peninsula University of Technology.

Other achievements with government included collaboration with DEAT's Marine and Coastal Management department. From marine turtles and shark fisheries, to abalone and the aquarium fish trade, through to marine policy issues, TRAFFIC helps to monitor the impacts of the fishing trade on species.

'To protect our terrestrial and marine wildlife, we researched all aspects of the trade dynamic to identify effective interventions that will reduce the pressure on targeted species,' says Newton. A long-awaited development was the establishment in 2004 of a national Scientific Authority for South Africa, under the auspices of the South African National Biodiversity Institute (SANBI). The Scientific Authority conducts assessments of South Africa's CITES-listed and other indigenous species, with the aim of creating a clear picture of the effect of trade on particular species.

1998
The Kalahari Lions

'In the vicious heat of the Kalahari summer – when temperatures soar above 60 degrees – the Shepherd's tree attracts animals from kilometres around because it offers the only shade. On one occasion I darted a lioness to put a collar on her and was sitting in the shade of a Shepherd's tree waiting for her to recover when several other lionesses arrived, seeking shade. Needless to say, I was the one who made tracks.'
– Dr Paul Funston

The Kalahari lions roam the vast Kgalagadi Transfrontier Park (KTP) between South Africa, Namibia and Botswana.

Large carnivore specialist, Dr Paul Funston, lived here for three years from 1998, to conduct a project on population dynamics and movement patterns of the Kalahari lions. By radio-collaring 20 members of the resident prides, he tracked their progress inside and outside the park, across all three borders, something that had never been done before.

'After surveying the population we found that about 450 lions, comprising 18 prides, occur in the Kgalagadi, more than we initially estimated,' said Funston. 'However, this is no cause for complacency.' As lions wander freely across the fenceless boundaries between the park and surrounding farmland, Funston believes that the future of their conservation rests on negotiating an agreement between people and the parks.

He urged local farmers to contact the park the moment lions cross onto their land. This way they can be captured by parks officials and returned to the park, instead of being killed. However, the farmers explained they need the park to act faster when they report the lions.

'We don't get enough compensation to cover the loss when lions kill 10 or 20 of our sheep. We agree that the lions should not be shot but sometimes we have no alternative if they are not removed fast enough or if they habitually return,' said one farmer on the unfenced Botswana side where the lions are most active.

The solution is to stop the lions from entering the farms, but it is easier said than done. Various options were mooted, including fences, but fences are also useless unless they are properly maintained. Again this requires staff and money.

There's no overnight solution but the farmers and parks officials agreed to make every effort to cooperate over the conservation of the lions.

Efforts to defuse the lion–human conflict continue, but as wild habitats are increasingly threatened by climate change and human encroachment, it is important that effective measures are found to protect the diminishing populations of an iconic African species.

Dr Paul Funston removing a tracking collar from a tranquilised Kalahari lion

2003 – 2019
Black rhino project success

Black rhino Photo: Peter Chadwick

The Black Rhino Range Expansion Project (BRREP), supported by the WWF Nedbank Green Trust since its early days, is one of WWF's most successful species conservation projects ever. This is welcome news in a time of relentless poaching.

BRREP was established in 2003 by veterinarian and project leader, Dr Jacques Flamand. Since then it has established 12 black rhino populations in private and community reserves in KwaZulu-Natal (KZN), Gauteng and Limpopo. In 2019, the project celebrated its first cross-border translocation, successfully resettling 17 genetically diverse rhinos from KZN in a wildlife reserve in Malawi.

The project is central to the goal of increasing the population growth of black rhinos, which are listed as critically endangered.

Black rhinos once numbered more than 100 000 across sub-Saharan Africa, but from the 1960s poaching for their horns has decimated their numbers. There are only 2 000 left in South Africa.

The WWF Nedbank Green Trust is currently supporting the next stage of BRREP's rhino population management programme, Black Rhino Conservation Management Through Science-based Support, which started in 2017.

'Through this project 90% of the DNA samples from all the rhinos in the BRREP populations have already been collected,' says Flamand. 'This enables us to make informed management decisions about when to swap out dominant males or their offspring, and when new genes need to be brought in to maintain genetic diversity. It is also a critical tool in combating transnational rhino horn trade and anti-poaching work.'

The samples are submitted to RhODIS, the national DNA indexing system for black and white rhinos that was initiated by the Veterinary Genetics Lab at the University of Pretoria. The genetic samples, as well as data gleaned from ongoing monitoring at all the project reserves, also offer strong insight into black rhino social associations and reproductive behaviour.

Analysis of black rhino reproductive behaviour was successfully used in November 2018 for a BRREP site that required detailed genetic information to make an informed decision concerning the live removal of rhinos to maintain genetic diversity. Paternity testing of offspring assisted in identifying the most suitable individuals for live offtake, as well as planning regarding the retention of founder rhinos, particularly the population's dominant bull.

A black rhino stud book and genetic management plan for each of the BRREP sites are in process and have been reviewed by a number of rhino geneticists, with positive feedback. The management plan is the first of its kind for black rhinos.

The &Beyond Phinda Private Game Reserve in northern KwaZulu-Natal, spanning almost 30 000 ha, was one of the first range expansion sites for the programme when it received black rhinos from Hluhluwe–iMfolozi Game Reserve in 2003.

'It's been an incredible success story and private game reserves have proved that we can manage and monitor state assets with great success,' says Phinda Conservation Manager, Simon Naylor. 'A number of calves from the founder population have been born on Phinda and because of the population increase, BRREP has since been able to translocate four black rhino offspring from here to other reserves.'

'We greatly appreciate the support of WWF and the WWF Nedbank Green Trust,' says Naylor. 'We are in a high poaching region and we have to continue the fight. We spend a lot of money on dehorning, notching, intensive security plans, counter-poaching dog units, special-ops teams, stringent visitor management and access control, staff biometric systems, constant community collaboration and engagement, and a reward system for information on poachers. Now we also have the DNA profiling and genetic management plan, which significantly assists us.'

'Communities are key to the success of rhino conservation and anti-poaching and we have spent a lot of time engaging the communities in our area and including them in education programmes. Two-thirds of Phinda is community-owned – we lease the land from the communities and we constantly meet with the tribal authorities, who play a key role in anti-poaching efforts.'
– Simon Naylor

Rhinos and RISE

On World Rhino Day 2015, WWF South Africa, the WWF Nedbank Green Trust and the Southern African Wildlife College joined forces to create the Rural Initiative for a Sustainable Environment (RISE), a practical approach to supporting rhino and wildlife conservation.

RISE capacitates communities neighbouring wildlife reserves to benefit from wildlife through community-based natural resource management, an approach that empowers people who live near protected areas to manage their own environment, wildlife and land.

The WWF Nedbank Green Trust strongly supports partnering with communities in conservation, and through RISE is funding projects with three communities adjacent to key wildlife areas that have rhino populations in KwaZulu-Natal, Limpopo and along the Mozambican border of the Kruger National Park.

'RISE is about benefiting communities through wildlife, by improving governance and developing sustainable livelihoods from the natural resources in wildlife reserves,' explains Dr Jo Shaw, WWF-SA's Senior Manager: Wildlife Programme / Africa Rhino Lead.

'When communities feel they are invested in protecting a resource, in this case rhino and other wildlife, then people are far more likely to help protect them.'
– Dr Jo Shaw

Five-point rhino conservation strategy

The WWF Nedbank Green Trust is helping to fund a five-point rhino conservation strategy, led by Dr Shaw:

1. Continuing the Black Rhino Range Expansion Project to help boost black rhino population growth by relocating founder populations to additional areas committed to protecting them;
2. Working with people and communities who border on wildlife reserves and protected areas to create cooperation linkages and benefits;
3. Supporting law enforcement activities with forensic, judicial and information management tools;
4. Recognising that the illegal wildlife trade is an international problem that cannot be solved within our borders – it requires extensive cooperation between South Africa and significant countries in the illicit supply chain, notably Mozambique and Vietnam;
5. Understanding the international rhino horn market, knowing who the consumers are in the major markets, such as Vietnam's, and then using this information to develop targeted behaviour-changing campaigns.

Southern African Wildlife College

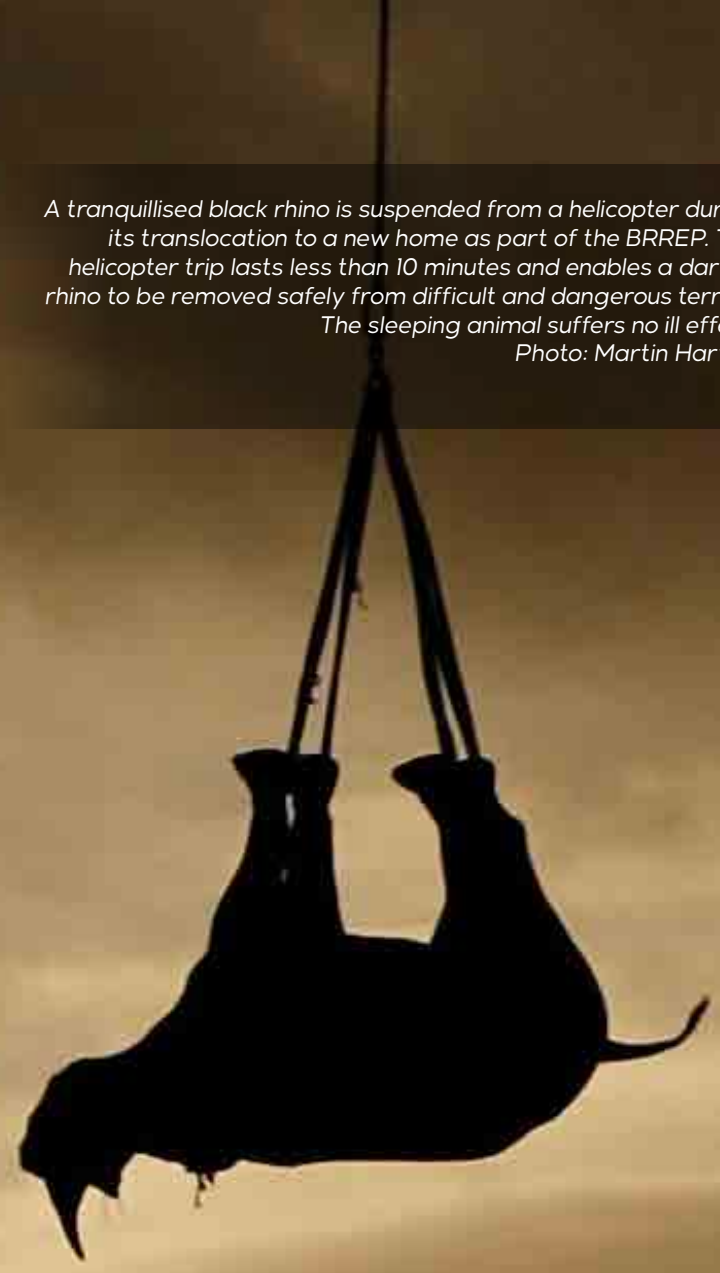
WWF is one of the founding members of the South African Wildlife College (SAWC) and the WWF Nedbank Green Trust funds two of the college's full-time staff members.

The SAWC's Chief Executive Officer, Theresa Sowry, explains that the college focuses on conservation education, training and skills development of young people, many of them previously unemployed. The college is an accredited training institute and has aligned its curriculum with the standards of the South African Qualifications Authority and the National Qualifications Framework, to ensure both national and international recognition.

Field ranger training at the SAWC ensures that students graduate as well-trained, motivated rangers with advanced skills for anti-poaching operations. The SAWC has a canine (K9) unit, established in 2015, where tracker dogs are trained to use their sense of smell to apprehend poachers. The WWF Nedbank Green Trust is funding training posts in this unit, led by consultant and dog-training specialist Johan van Straaten.

K9 unit dog handler, Wisdom Makhubele, who trained with Van Straaten, is a SAWC graduate committed to playing his part in South Africa's wildlife and conservation future.

A tranquillised black rhino is suspended from a helicopter during its translocation to a new home as part of the BRREP. The helicopter trip lasts less than 10 minutes and enables a darted rhino to be removed safely from difficult and dangerous terrain. The sleeping animal suffers no ill effect.
Photo: Martin Harvey



'I cannot imagine a wildlife reserve without rhino and elephant, and I am playing my part to keep them safe and ensure they have a future.'
– Wisdom Makhubele

2006
One in a thousand

It is critical to protect and monitor these magnificent marine creatures and to encourage communities to participate in their conservation. South Africa has the world's longest-running monitoring and conservation programme for the leatherback and the loggerhead, dating back almost 60 years.

Loggerhead hatchlings heading for the ocean Photo: Prof Ronel Nel

Out of 1 000 sea turtle eggs only one might survive to adulthood. This is the natural survival ratio of the world's largest sea turtles – the leatherback and the loggerhead – which nest along the northern KwaZulu-Natal and southern Mozambique coastline.

The leatherback is far larger than the loggerhead; the shell lengthof the loggerhead is 80–90cm, while the leatherback is double the length at approximately 160cm. Both species can live to ±150 years, and I have worked with a number of turtles that are ±60 years old. Leatherbacks have been around for at least 100 million years, dating back to the Cretaceous era of the dinosaurs.

From 2006, the WWF Nedbank Green Trust has supported this sea turtle conservation project, partnering Ezemvelo KZN Wildlife in several initiatives. 'Over the 2006/7 season we recorded 2 672 loggerhead nestings and 352 leatherback nestings in the project area between Kosi Bay and Mabibi ,' says Cedric Coetzee of Ezemvelo KZN Wildlife. The monitors are out every morning and every evening from October to March – the season when sea turtles beach to lay their eggs.

At the time, that was the highest number recorded for both species in 44 years but now sea turtle populations in southern African waters are declining. Major threats include subsistence consumption of turtle meat and eggs in some poverty-stricken coastal areas, plastic pollution and unmanaged commercial trawling and longline fishing. A critical step in sea turtle conservation has been to encourage the Mozambican and other governments to participate in turtle management. Conservation legislation in Mozambique is now in place and a marine reserve has been established in southern Mozambique.

The Turtle Eco Schools Programme was also initiated in the project area to inspire learners at schools in coastal northern Kwa-Zulu Natal about marine conservation, and gently dispel myths about the turtles. One myth is that if turtle eggs are added to chicken feed, the chickens will lay as many eggs as the turtles (an average of 120 eggs per nesting).

Ongoing monitoring and research

Turtle monitoring and research is continuing, with conservation organisations and universities constantly updating approaches and findings. Professor Ronel Nel from the Department of Zoology at Nelson Mandela University, has been researching sea turtles since 2002 as part of the iSimangaliso Turtle Monitoring Programme, together with Ezemvelo KZN Wildlife.

Prof Nel explains. 'There are currently about 70 female leatherbacks *(Dermochelys coriacea)* nesting per year in iSimangaliso and about 1 000 loggerheads *(Caretta caretta)* – both are modest populations. Leatherback turtles have remained critically endangered in the region, despite long-term protection. 'We may need to apply for additional protected areas to improve their foraging habitat. The decline might also be entirely human induced.'

Measuring a nesting leatherback turtle

2006
Smooth-hounds and soupfins in the spotlight

With support from the WWF Nedbank Green Trust, since 2006 the previously unknown trade of South Africa's 'table' sharks has been exposed.

'I chanced upon this shark trade in the course of my research into South Africa's besieged linefish stocks. I discovered fishermen and fishery companies involved in extensive export trade of our smooth-hound and soupfin sharks,' says Markus Burgener, who heads up TRAFFIC's East African and Southern African fisheries programme.

TRAFFIC is an international NGO working to ensure that the trade in wild plants and animals is not a threat to the conservation of these species in the wild.

Several companies are exporting shark meat fillets to Australia, where there is a bottomless market for shark. Whereas most South African fish and chips shops use hake, the Australian counterparts use shark meat and call it 'flake'.

'Since so many of our linefishing species have collapsed, an increasing number of linefishermen are targeting our smooth-hounds, soupfins and other demersal – or bottom-dwelling – sharks,' Burgener explains. 'The worry is that the shark stocks are unlikely to be able to sustain the increased fishing pressure, as smooth-hounds only become sexually mature at 12 years, while soupfins mature at eight. Both have long gestation periods and small litters once every couple of years.'

Smoothhound and soupfin sharks are also essential to the marine ecosystem. They form a significant part the great white shark's diet. If you take away the primary food source of this top-level predator, the great white shark disappears.

TRAFFIC campaigned with other international and national conservation organisations for governments to develop a strategy for the sustainable management of their shark populations. This resulted in South Africa's 2015 shark biodiversity management plan, which recognised the need for an increased focus on research into shark fisheries and monitoring and control of trading policies.

Smooth-hound Photo: Peter Chadwick

2010 – 2020
Community-owned Big Five game reserve

After a decade of hard work (2010 – 2020), the community-owned Somkhanda Game Reserve in northern KwaZulu-Natal is teeming with game and is one of the first successful community owned and managed Big Five conservation ventures in South Africa.

From the outset Somkhanda was funded by the WWF Nedbank Green Trust and co-managed by Wildlands and the Emvokweni Community Trust (ECT), which represents the Gumbi community. 'We have worked with the Gumbi community for the past 10 years to create the 12 000-hectare Somkhanda out of their 26 000-hectare successful land claim,' says Roelie Kloppers, Wildlands Executive Director.

> *'Somkhanda Game Reserve is a long-term project that has required years of support and training to become successful as a Big Five game reserve that is both owned and managed by the community. There are several other game reserves in the region owned by communities, but these are hired out to the private sector.' – Roelie Kloppers.*

Somkhanda Lodge Photo: Chris Laurenz

To assist with the training of community members to manage all aspects of the reserve, Nedbank funds 200 interns from the Gumbi community through the Youth Employment Services (YES) programme. The reserve currently employs 52 people from the community, and all short-term contracts, such as for alien bush clearing, are taken up by the community.

As is the case with all Big Five reserves, the training, running and security costs are high. To raise funds, the reserve hosted the 100 km Somkhanda Challenge – its first mountain biking event – from 1 to 3 November 2019, at a cost of R5 000 per rider, including accommodation. The aim is to develop this into a top event on the mountain biking calendar. Somkhanda receives additional funding from the German government and Friends of Somkhanda – individual donors who 'adopt' lions and rhinos to bring in money. The Department of Environment, Forestry and Fisheries funds the salaries of the game guards through its Environmental Monitors Programme.

'Now that the conservation and ecological side is thriving, we are concentrating on the governance side,' says Kloppers. In 2016 the WildTrust and the ECT created a joint management board, with the aim of completely moving the board to the ECT in a few years' time, when they would manage all aspects of Somkhanda – from the reserve management to marketing and tourism.

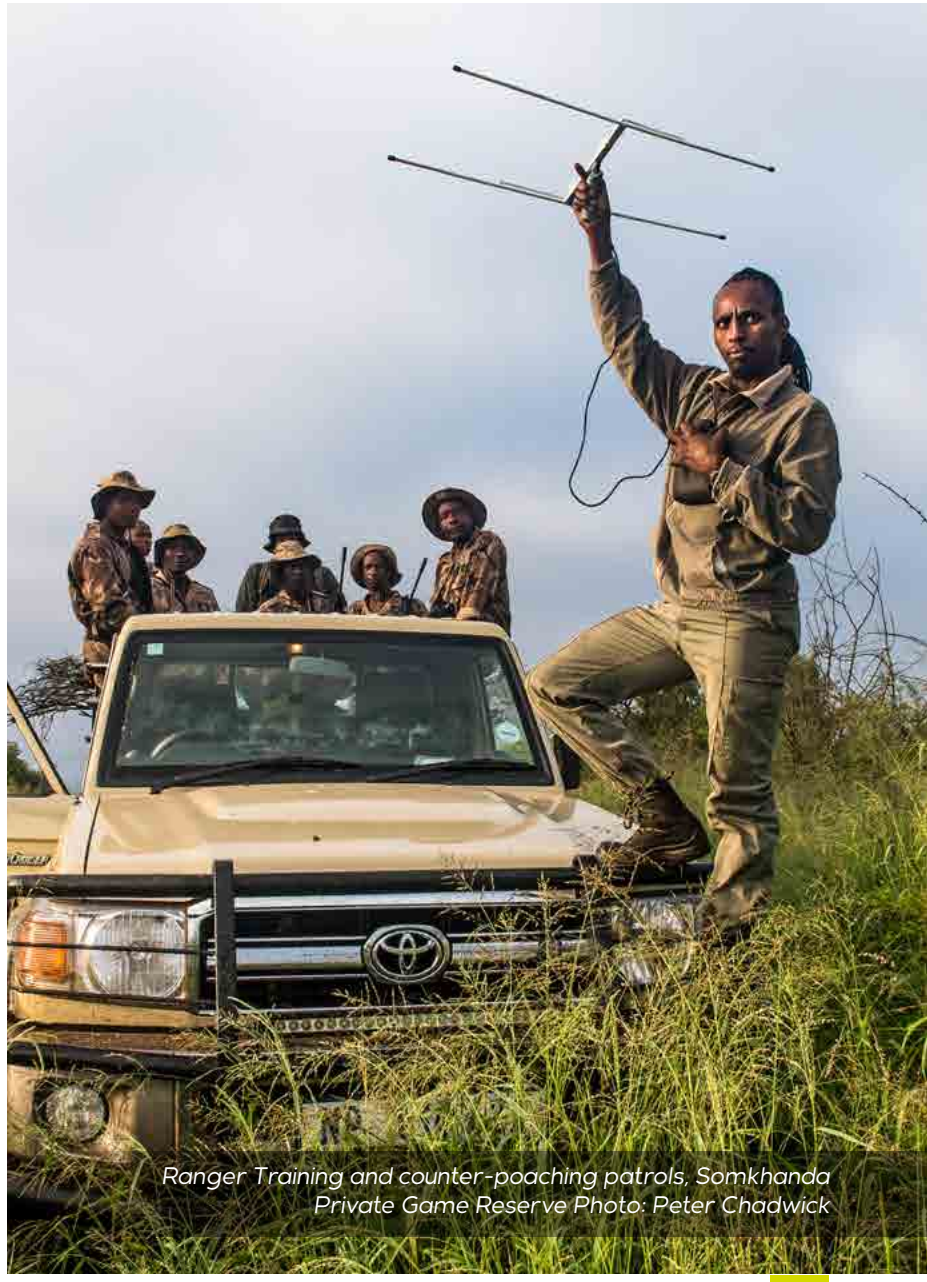
A four-hour drive from Durban and a six-hour drive from Johannesburg, Somkhanda is refreshingly affordable for many South Africans. It offers a self-catering lodge (Somkhanda Lodge) at R450 per person per night, and four tented camps (Marula, Zebra, Teacher and Scotia) at approximately R250 per person per night. Bush walks and wildlife monitoring are also offered at affordable rates.

The Gumbi community of approximately 20 000 people receives 10% of all tourism money from the reserve, which the ECT allocates for schools, crèches, clinics, cattle dipping programmes and small-business opportunities.

Nkosinathi Gumbi is the reserve's manager. He was trained at the Southern African Wildlife College near Kruger National Park, another WWF Nedbank Green Trust-funded initiative. To advance his management skills and experience, Nkosinathi currently works alongside Wildlands manager, Meiring Prinsloo.

Community member, Nathi Gumbi, who has championed Somkhanda from the outset, is the Strategic Manager for the Gumbi and neighbouring community. He manages all the projects and governance issues outside of the reserve. Nathi explains that to supplement the community income from the reserve in this poverty-stricken area, they are establishing a network of mainly women farmers and micro-enterprises.

The farmers are growing crops like cassava and sorghum and vegetables, including indigenous vegetables like madumbe (indigenous potato). The focus is on climate-smart agriculture that uses less water and no pesticides. The micro-enterprises include craft businesses, home stays, chicken farms and spaza shops, which collectively create a micro-economy to keep the money in the area so that, step by step, it can develop and become more prosperous, with Somkhanda as its flagship.



Ranger Training and counter-poaching patrols, Somkhanda Private Game Reserve Photo: Peter Chadwick

CLIMATE & ENERGY

CLIMATE & ENERGY INSIGHT

Tatjana von Bormann, Impact Lead, WWF-SA

The biophysical impacts of climate change, and the risks to which we are exposed, are increasingly hitting South Africa's economy hard. We cannot continue to function with a carbon intensive economy that is heavily dependent on fossil fuel, including the fact that around 90% of our electricity continues to be produced by coal-fired power stations. So how do we move towards a carbon-neutral, climate-resilient economy where we achieve positive outcomes for people, employment and the environment? It's a protracted but nevertheless urgent process that requires ongoing, intensive engagement with government, business and civil society.

Through WWF-SA and the WWF Nedbank Green Trust we have developed different levels of support for this. We see our role as developing a critical mass to achieve a deep transition to a carbon neutral and climate resilient economy by 2050, and to do so in a way that creates alternative jobs and livelihoods for all those who currently depend on the fossil fuel industry.

Fundamental to a deep transition is our engagement with key stakeholders, as it needs simultaneous systemic changes at multiple levels across society. It also requires very careful management of change, which can be threatening for people when the discussion centres solely on the effect on their jobs.

The ambition is for South Africa to have net zero greenhouse gas emissions by 2050. The Paris Agreement pledge requires us to set ambitious climate targets in the effort to cap global warming at 1.5 degrees Celsius. The Independent Panel on Climate Change report, Global Warming of 1.5°C, points out that this cannot be achieved by national government alone. All our cities and urban economies, our municipalities, informal settlements and the informal economy need to be participating in creating a resilient and carbon-neutral society.

There are a growing number of companies and cities who are standing up for the net zero target and taking their own action to help the economy get there, mobilising themselves under the Alliance for Climate Action SA, which is convened by WWF-SA, the National Business Initiative and C40 Cities.

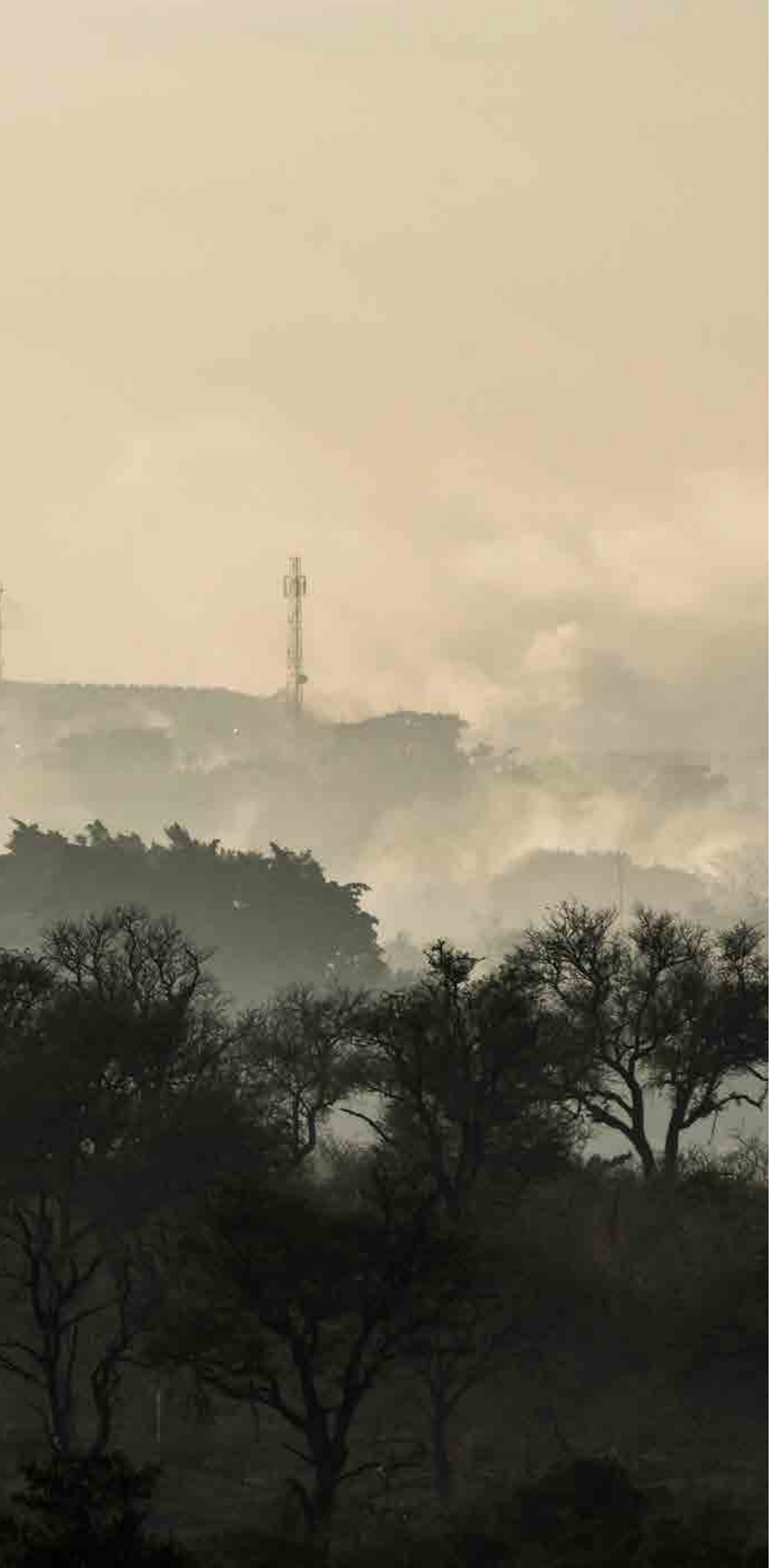
The climate events of the near future are going to demand an enormous amount from our government and communities and we are just not equipped to respond. It is widely said that Covid-19 is only the dress rehearsal; that we are heading into an era of pandemics and very unstable climatic events.

So what to do? While we push for and support climate action globally and domestically, South Africa needs to ensure that no new coal-fired power stations are financed or approved in future and that at least five of the existing coal-fired power stations are decommissioned by 2025. This is Eskom's target and part of the government's Integrated Resource Plan, and we will hold them to it.

Adaptation, mitigation, and resilience pathways need to be implemented in energy, transport, agriculture and our cities and towns. Through the WWF Nedbank Green Trust we see our role as supporting the implementation of these impending transitions. It is a hugely ambitious undertaking as we struggle with the economic impacts of Covid-19, but we cannot afford further delays on climate action.

If, over the past five years, the government had fully implemented the Renewable Energy Independent Power Producer Programme to which it committed, we would be in a far better position to transition away from coal. Living by the principles of just transition, we need to accelerate climate action to secure and safeguard our future.

2011
Cosatu proactive about SA's green needs



'The opportunity to participate in a project designed to develop Cosatu's climate change policy framework was a very exciting breakthrough for us,' says WWF-SA's low carbon frameworks manager, Louise Naudé, who led this WWF Nedbank Green Trust climate change project. 'We have learnt a lot from organised labour, and have hopefully made a contribution too.'

A major thrust of the climate change project is to work with organised labour whose position and policies are critical to the evolution of a green economy.

A three-day labour workshop on climate change, held in 2011, was attended by union federations Cosatu, Nactu and Fedusa, as well as the International Trade Union Confederation (ITUC). Cosatu national office-bearers attended throughout.

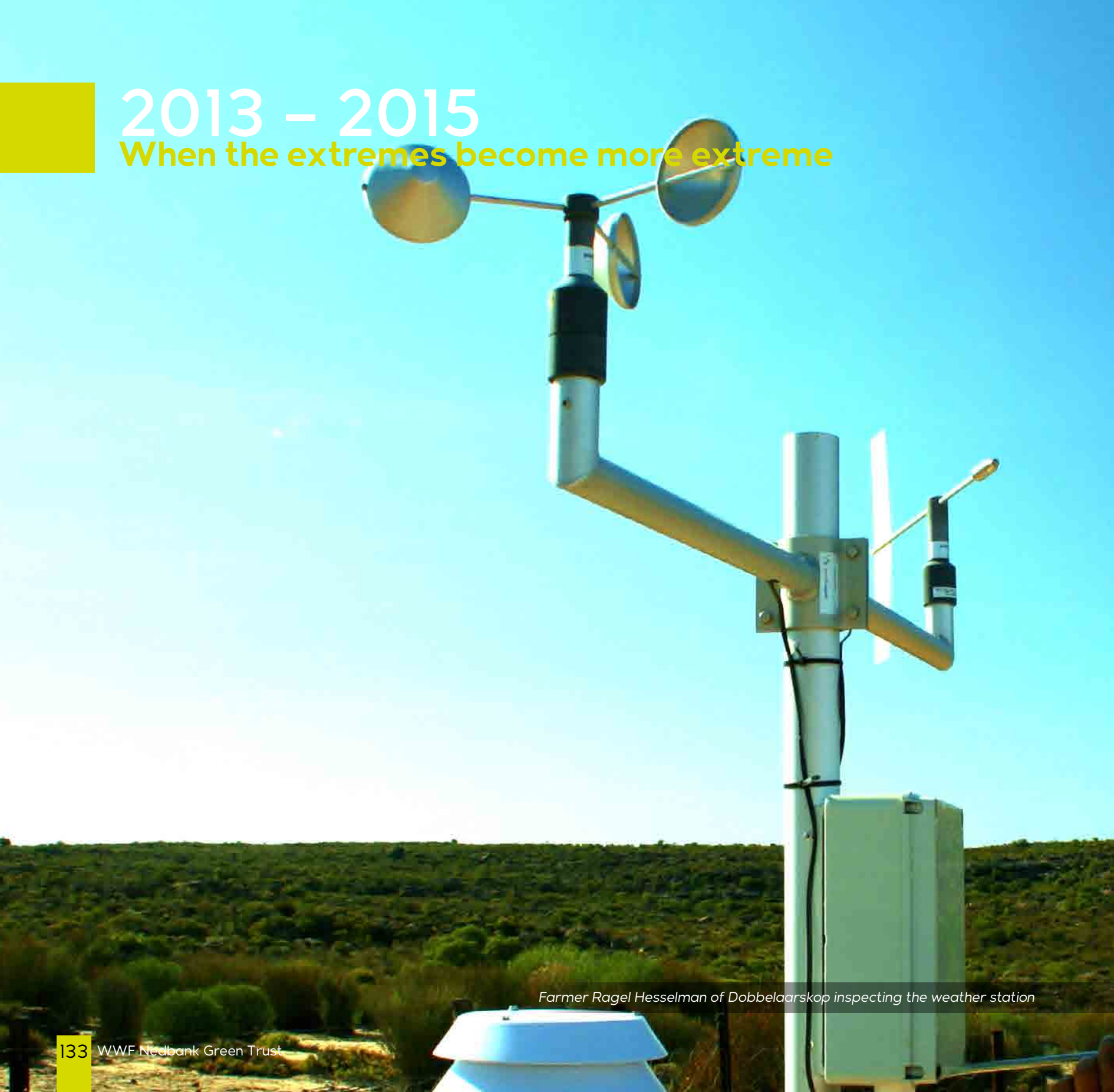
'The unions hold progressive positions on the need to shape a climate-resilient, low-carbon economy. For example, they are keenly aware of the urgent need for renewable energy in South Africa, but not at the expense of the country's developmental agenda. WWF and the WWF Nedbank Green Trust can play a role in making the case for a low-carbon path that *is* a developmental path,' Naudé explains.

Labour organisations and environmental organisations, with participation by some Cosatu affiliates, are researching the potential for green job creation across a broad range of sectors. These include food, agriculture, construction, energy, housing, water, manufacturing, mining, transport, waste management, tourism and hospitality.

'WWF has contributed to the research, particularly in the energy sector, and is also exploring what it would cost to create these climate jobs,' says Naudé.

'The campaign has the potential of uniting a broad range of organisations and organised labour around a common agenda. An interesting debate is whether these jobs should be public sector jobs only, or a mixture of public and private sectors. The issue at stake is how to effect a "just transition" to a low-carbon economy, without putting people in high-carbon jobs out of work.'

2013 – 2015
When the extremes become more extreme



Farmer Ragel Hesselman of Dobbelaarskop inspecting the weather station

There are few better places to research the direct effects of climate change or extreme weather conditions than the Bokkeveld Plateau around Nieuwoudtville in the Succulent Karoo. This is where the WWF Nedbank Green Trust is funding an on-the-ground climate change adaptation project with small-scale sheep farmers.

'The farmers here already face an extreme climate that ranges from over 40° Celsius in summer to minus four degrees in winter. Further climate stresses can destroy their livelihood and they have nothing else to fall back on,' says coordinator Bettina Koelle of Indigo Development & Change, a farming-focused NGO that has been working in this area since 2000 and which is leading this project.

Two years ago several small-scale sheep farmers, all women, approached Koelle and her team and asked for help in better understanding the weather. They expressed concern that the summer and winter extremes are becoming more extreme and that they needed to know how to cope with the effects on their livestock, vegetation and water supply.

'In addition to thirst and hunger, livestock can die of heat or cold stress, and if they have any diseases this makes them even more susceptible as their resistance is lowered,' says Koelle, who approached Dr Emma Archer van Garderen, a chief researcher working on climate change within the Natural Resources and the Environment division of the Council for Scientific and Industrial Research, and Dr Robyn Hetem, research officer within the Brain Function Research Group of the School of Physiology at Wits University, both of whom have been researching the effects of climate change on livestock.

Together with the farmers, the project team co-developed a plan to research what happens to the sheep on four small-scale farms on the northern, southern and eastern sides of the Bokkeveld Plateau. This built considerable climate variability into the research. All four farms are within 75 km of Nieuwoudtville where the project team is based. There is a strong rainfall gradient from the north to the south, with the northernmost region receiving an average of 550 mm of rain per year, while the south near Clanwilliam drops to between 200 mm and 250 mm per year.

Fully automated weather stations have been erected on each of the farms. These include a rain and temperature gauge with a logger that takes temperature readings every hour and measures rainfall to 0.2 mm accuracy as well as recording whether it is a longer, gentle rain or a downpour. The type and spacing of rain is extremely important to farmers.

During extreme heat and cold, the sheep need to be able to access areas that are sheltered from the elements. In anticipation of this, the farmers are learning to read the weather patterns in advance. They then move the sheep to more protected areas before the weather hits. They are also adjusting their shearing times according to the weather predictions.

'Climate change workshops are held with the farmers where we discuss the forecasts for the next three months, and we are piloting an SMS weather forecast service. Most of the farmers have a hill on their farm where they can receive SMS's,' Koelle explains.

Once the three-year project is completed, the findings, local knowledge and lessons learnt will be shared with other small-stock farmers in the area.

2013 – 2015
Looking ahead to low carbon transport in SA

Photo: WWF-SA

Emissions from transport in South Africa account for over 12% of South Africa's total CO_2 emissions (carbon emissions), which cause global warming. Significantly, about 68% of this is from the combustion of diesel and petrol on our roads.

These statistics are provided by WWF-SA's low carbon frameworks manager, Louise Naudé, who led the WWF Nedbank Green Trust National Climate Change Policy and Outreach Project to appraise transport in South Africa in the transition to a low-carbon economy.

'Previously, a key focus of this project was to contribute to government climate change policy, but after the National Climate Change Response White Paper was approved in November 2011 we shifted our focus to engaging with its implementation,' says Naudé. The White Paper includes a directive for every economic sector to develop its own carbon budget and mitigation plan.

'We chose to work on transport because it is a key economic sector and contributor to South Africa's emissions, second only to energy production. We are exploring what a low-carbon plan could look like in the South African transport sector. We call these Low Carbon Frameworks.'

Naudé explains that part of a Low Carbon Framework for the transport sector would include arriving at targets for 'reduce shift improve' initiatives – reducing the demand for transport, modal shifts, and improving the emissions profile of the technology we use.

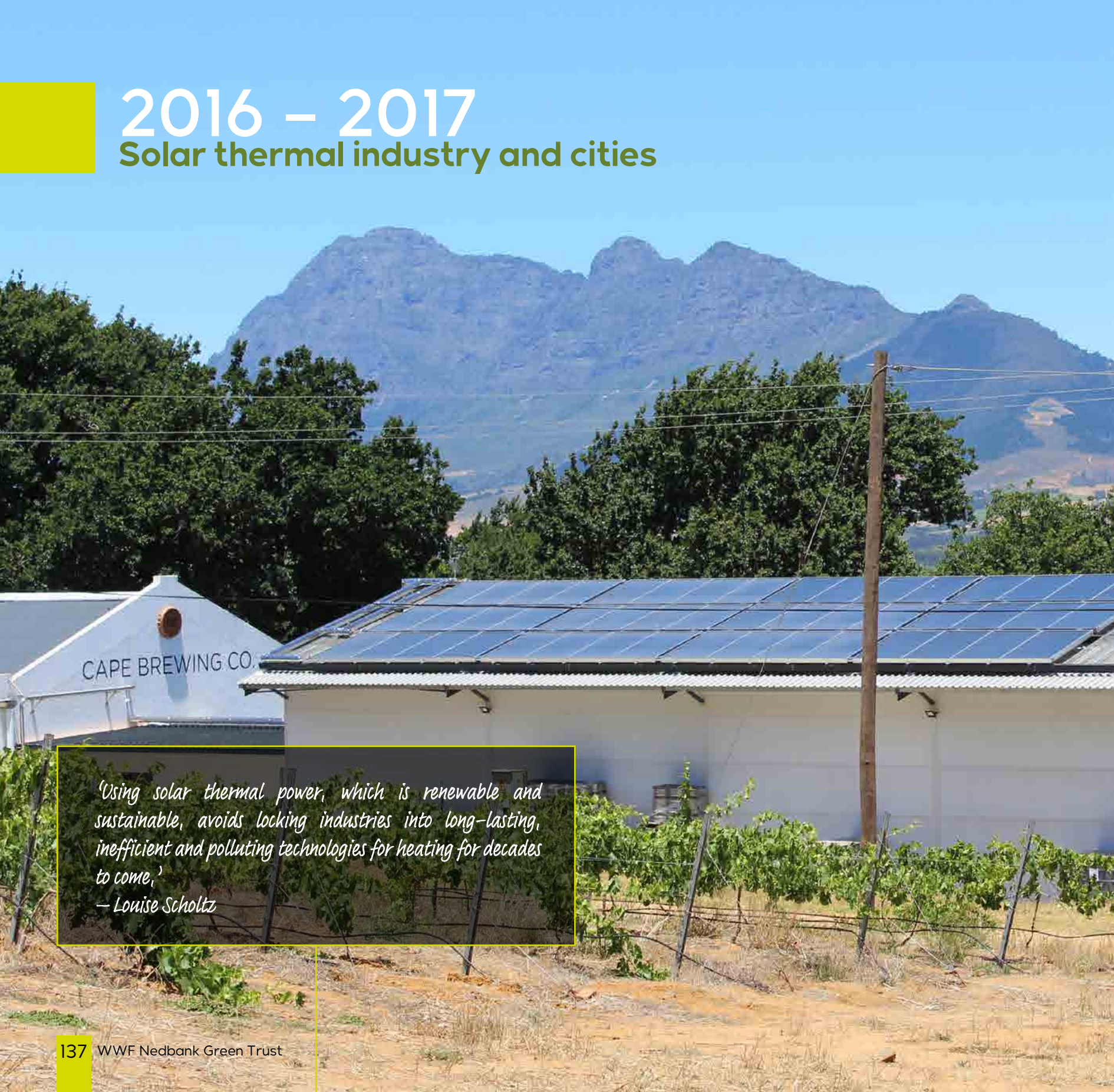
Examples of targets include a significant reduction in road transport; the desired goal being a 50% shift of freight from road to rail by 2025. Railways are a far more emissions-efficient bulk carrier of people or goods than high numbers of vehicles on the roads. Primary resources such as coal, iron and minerals are currently the backbone of rail income, whereas if more of products like processed foods are shifted to rail, then Transnet would have a business case to invest further. Another target is to significantly increase the number of electric and hybrid vehicles on the road, which would require a considerable drop in their price and a network of renewable energy-powered charging stations.

The thorny question within a Low Carbon Framework is the trade-offs to be made when deciding what to prioritise within the emissions space.

'Everything we do, even the moves to a low-carbon economy, creates emissions because we are so addicted to coal and oil,' explains Naudé. 'Smart choices need to be made in deciding how to spend (a) our money and (b) our emissions, and what kind of mitigation, equity and development return we will get.

'For example, we could spend a lot of state money and increase emissions to expand road infrastructure in the interests of private cars, or we could spend it on public transport infrastructure and improved rail and shipping facilities to achieve lower emissions. Even if the up-front costs of putting low-carbon initiatives in place are high, it will help to position us in a global low-carbon economy. Let's not waste our resources and carbon budget on going down the wrong road.'

2016 – 2017
Solar thermal industry and cities



'Using solar thermal power, which is renewable and sustainable, avoids locking industries into long-lasting, inefficient and polluting technologies for heating for decades to come.'
– Louise Scholtz

Solar thermal technology is not widely known in South Africa, but it can make a significant contribution to the renewable and sustainable energy mix for South African industries and municipalities. In 2016/17, the WWF Nedbank Green Trust-funded Renewable Energy for Industrial Processes and Municipal Services project investigated and demonstrated the use of solar thermal energy within industrial processes, focusing on the agriprocessing and textile sectors. In addition, it investigated the potential for solar thermal energy use in state hospitals.

The technical partner for the project was the Centre for Renewable and Sustainable Energy Studies at the University of Stellenbosch. 'The project focused on solar thermal energy because, while there is strong uptake of photovoltaic (PV) energy generation in South Africa, there are very few industrial solar thermal installations. This is because the technology and benefits are less widely known and understood,' says Louise Scholtz, WWF-SA Programme Manager: Urban Futures.

The difference between solar thermal and PV systems is that solar thermal panels absorb heat from the sun to heat a liquid (water or oil), substance (salt), or air, whereas PV panels absorb light from the sun and convert it to electricity.

Industry is one of the largest energy users in South Africa, currently making up 36% of energy use, most of it generated by fossil fuel.

'Solar thermal energy is particularly suitable for industrial-scale boilers, used in agriprocessing and textile industries, as well as buildings that use a lot of water, such as hospitals,' explains Scholtz. 'Furthermore, most of the energy requirements in these sectors are for low temperatures, which make them particularly suitable for thermal heat applications.'

Agriprocessing and textile industries have been earmarked by the Department of Trade and Industry (dti) as key growth industries due to their job creation potential. The dti's stated goal is to reindustrialise and rebuild the country's manufacturing base. This requires a reliable power supply. Using solar thermal power for process heating can increase the availability and reliability of energy supply, while addressing the high-carbon emissions resulting from over-dependence on electricity generated by fossil fuel.

'To demonstrate the benefits of installing a solar thermal system in agriprocessing, we analysed the design, installation, financial savings and resource efficiency of an existing system used by the Cape Brewing Company (CBC) on the outskirts of Paarl,' says Scholtz. CBC previously fulfilled all their heating needs using a paraffin boiler.

'In addition, we did an analysis comparing the unit cost of the system with the unit cost of other fuels. Although the initial capital cost of the solar thermal system is currently higher than that of coal, it looks very competitive over a five-year period compared with paraffin, liquefied gas, diesel and electricity because of zero fuel costs. Ongoing price hikes in electricity will make the systems increasingly more attractive,' Scholtz explains.

In addition, says Scholtz, 'the use of solar thermal energy for process heating could add to the growth of the manufacturing industry, as many of the components of solar thermal systems, such as the tanks, can easily be manufactured by local companies'.

2017 – 2018
Unlocking green jobs

The government and private sector in South Africa are increasingly researching and investing in green-economy developments, in line with green job creation strategies. These efforts include beneficiating biomass from invasive alien plants (IAPs) for a range of value-added industries such as those involving oil, biochemicals and wood pellets.

The manufacturing of wood pellets from IAPs is a significant value-added biomass opportunity. If households adopted their use at an incremental rate of 5% a year, this could result in the clearance of an estimated 2,3 million hectares of IAPs, which in turn could generate almost 1,5 million jobs until 2028. This could pave the way for workers in the fossil fuel sector to move horizontally into the renewable energy sector.

Removing invasive alien plants from our water catchment areas would free up water for the economy. Invasive alien vegetation consumes an estimated 4,7% of mean annual water runoff, which represents significant potential for addressing South Africa's water security challenges.

For years the Department of Environmental Affairs has been advocating an exponential increase in the extended public works IAP clearance programmes through Working for Water, but it has not been successful. However, the opportunities exist and things are moving in the right direction now that the financial and economic benefits of these programmes are better understood.

In 2017/18, the WWF Nedbank Green Trust, with the Agence Française de Développement (AFD) supported a two-year research initiative to identify areas of potential for the development of green jobs. The project, Unlocking Green Jobs in South Africa, was a collaboration between WWF-SA and Trade & Industrial Policy Strategies (TIPS), a non-profit economic policy research centre based in Pretoria.

'TIPS is actively supporting the development of South Africa's Industrial Policy Action Plan and one of the key areas concerns water, sanitation and industrial development – to understand the linkages between water and the economy and the opportunities to create businesses and entrepreneurship around water,' says Gaylor Montmasson-Clair, TIPS Senior Economist.

One of the three key potential green employment nodes identified by researchers was adding value to the biomass resulting from the clearing of invasive vegetation. The Unlocking Green Jobs report notes an increase in emergent opportunities and research and development activity in the areas of biofuels (torrefied biomass), biomaterials (biochar, filtration and absorbents) and biochemicals and nutrients (tannins, cosmetics and chemicals). This points to the range of policy choices the state has regarding beneficiation of biomass from IAPs.

The implications of including wood pellets as an important component of a diversified value-added industries strategy were evaluated in the report using a multicriteria analysis.

The report states: 'Strong socio-economic benefits would stem from the rollout of wood pellets, with the conversion of over one million non-electrified households from using 'dirty' fuel – such as paraffin and firewood – to using wood pellets.

'The side effects of the high usage of paraffin and firewood (creating cooking smoke and fumes) contribute to lung diseases, such as cancer, pneumonia and acute lower respiratory infection. In addition, cooking on open fires and paraffin usage increase the risk of house fires. Even focusing purely on the financial implications, a strategy to roll out wood pellets as an alternative could result in significant downstream savings in the healthcare system and more widely.'

Despite these strong arguments for promoting the green economy and an initial surge in wood pellet manufacturing activity, the production of wood pellets in South Africa has suffered major setbacks, with many facilities being mothballed as of February 2018.

Montmasson-Clair explains that while the industry has so far focused on large-scale production for the export market, a more decentralised and localised business model would be a more successful approach as it would combat some of the barriers associated with large-scale production, such as transport costs. Such a proposition supports localised economies, encouraging entrepreneurialism and, in this case, the creation of a local industry of wood pellet production and associated products, or distribution networks to service surrounding towns and households.

2013 – 2019
Open streets for citizens and cyclists

‘We can walk on the streets!’ said a small girl with amazement on Sunday, 27 January 2019, when people from every part of Cape Town filled Bree Street during Open Streets City Centre. The street was turned into a vehicle-free zone for a day of fun, togetherness, music, dancing, cycling, skateboarding and socialising. A month later, on 24 February, the people of Cape Town did the same during Open Streets Langa and on 31 March came out again during Open Streets Mitchell’s Plain.

‘The small girl’s comment shows that a seed has been planted and her generation will hopefully have a very different relationship with urban spaces and streets,’ says Marcela Guerrero Casas, who convened a group of Cape Town residents and founded Open Streets Cape Town (OSCT) in 2013. Over the past six years 19 Open Streets events have taken place across the city. OSCT’s main partners are the City of Cape Town, the WWF Nedbank Green Trust and the Transformative Urban Mobility Initiative (TUMI).

‘I believe that streets can bring people together. In a city like Cape Town, with its history of division and segregation, an Open Streets programme can profoundly change how we relate to each other and help people to feel comfortable in every part of the city,’ says Guerrero Casas. In 2019, she handed the reins to Rebecca Campbell, who has been part of the OSCT team since the outset. Guerrero Casa has returned to her home city of Bogotá, capital of Colombia, where the Open Streets concept started in 1974. It is now a global movement, with Open Streets programmes hosted in over 400 cities around the world under different names.

‘In addition to Open Streets days, we invited everyone to make 2019 the year of cycling to work (or wherever you travel to daily) in order to build on the #Bike2Work bike bus campaign we ran the previous year,’ says Campbell. ‘A bike bus is a group of cyclists riding together along a set route. We challenge people to travel to work in a bike bus on at least one Friday a month. Cycling in a group makes the commute safer and more pleasurable.’ Campbell started cycling as an adult when she joined Open Streets: ‘I cycle to work and to meetings, and on the weekends I like to explore the city by bicycle.

‘We believe the way forward for increased commuter cycling in Cape Town is through building bicycling communities, collaborating with our existing partners (Pedal Power Association, Bicycling Empowerment Network, Bicycle South and TSiBA Education, which are all doing amazing work in this sphere) and enlisting new partners in the private sector, which has great influence over employee mobility patterns.’

OSCT has participated in a number of initiatives concerning what cycling means to the individual across the socio-economic spectrum, and in May 2018 they won the TUMI challenge. TUMI is the leading global implementation initiative on urban mobility. With the prize money from German development agency GIZ, OSCT was able to organise additional Open Streets days and bring together 19 participants from 11 African cities for the first Open Streets Exchange for African Cities, a week-long event in Cape Town in October 2018. Growing from this exchange, in January 2019 participants from Kampala organised a Car Free Day in their city, and there have since been multiple Open Streets days in Addis Ababa, with plans in the pipeline for more in other African cities.

2019
Renewable energy for our cities and towns

Increased investment by both the residential and the industrial private sector in renewable energy (RE) generation – primarily in rooftop photovoltaic (PV) panels – is seen as the next big disruptor in South African cities. This is accelerating as a result of renewed load-shedding and ongoing concerns about Eskom.

In principle, metros and municipalities throughout the country support this disruption, as they too want to diversify their energy mix and reduce the carbon emissions associated with fossil-fuel-based electricity generation.

'The sticking point is that the national electricity regulatory system is not set up to accommodate a diversified energy mix, nor the decentralised management of it,' says WWF-SA's urban futures manager, Louise Scholtz. 'At the same time, reduced revenue as a result of the increased residential and industrial self-generation of electricity, or "grid defection", is posing a threat to the long-term financial sustainability of our metros and municipalities, which are currently required by law to purchase their electricity from Eskom.

'Electricity revenue is not allocated to support only the electricity services they provide – it is also used to cross-subsidise several other essential services. If municipalities could generate their own electricity or purchase it from independent power producers at competitive prices, and not be forced to pay the Eskom fixed price, it would help to address this threat to municipal budgets.'

Against this backdrop, in 2019, the WWF Nedbank Green Trust funded an in-depth investigation into the existing electricity distribution system at metro and municipal level in South Africa. The investigation is coupled with the development of workable models for metros and municipalities, and recommendations for alternative sources of revenue and funding from RE.

'Municipalities are grappling with the conflicting outcomes of encouraging increased investment in RE, while ensuring their long-term financial sustainability.'
– Louise Scholtz

Scholtz explains, 'Given the increasingly rapid convergence since 2011 between the average Eskom and RE tariffs, particularly wind and solar, and in light of studies from the Council of Scientific and Industrial Research showing that new wind and solar installations provide the cheapest source of energy, there is significant opportunity for municipalities to procure directly from independent power producers. Decreasing technology costs also open up potential opportunities for building and generating their own RE.

'For example, municipalities could set up large battery systems that can store PV-generated electricity. Battery care and maintenance is a major requirement in RE systems, and municipalities could appoint technical staff to do this, and benefit from selling the stored electricity. Eskom itself is already focusing on investing in the battery storage side, rather than in PV plants, as it feels this would be its most effective contribution to the energy security mix.'

While Eskom has not considered large-scale migration from fossil fuel generated electricity, an escalation in RE is essential to growth and development in South Africa and the reduction of our hefty carbon footprint. Scholtz says: 'We are confident this investigation will be a valuable contribution to addressing the case for RE capacity in our metros and municipalities, and creating an enabling environment for local government and increased private sector investment in RE, with an accompanying reduction in greenhouse gas emissions.'

2019 – 2020
Thirty JSE-listed companies commit

Agriculture for biodiversity - maintaining healthy palmiet wetlands in the Riviersonderend catchment, which is part of the critical 10% strategic water source areas Photo: Kobus Tollig WWF-SA

The air we breathe, the soil that provides our food, the bees that pollinate plants, the fish from the sea, the grasslands for grazing, the energy from the sun, the water we drink and use in every part of our lives … these are the goods and services provided by our landscapes, ecosystems and species – the biodiversity on which all businesses and our well-being depend.

Biodiversity is therefore incredibly valuable and one of South Africa's greatest assets. But, as the South African National Biodiversity Institute (SANBI) emphasises, our country's biodiversity is under severe threat – as is the case worldwide – with unprecedented levels of loss, including ecosystem destruction and accompanying species extinction through human activity, climate change and invasive alien species.

Responding to the threat, the WWF Nedbank Green Trust launched the three-year Biological Disclosure Project in March 2019, to which 30 Johannesburg Stock Exchange (JSE) companies committed in 2020, the UN International Year of Biodiversity. The project's centrepiece is an online toolkit aimed at developing the capacity of South African businesses to put a value on biodiversity by cost-effectively mainstreaming it in their strategies and practices.

Biodiversity valuation is the process of estimating the importance, worth or usefulness of biodiversity components for your business, ranging across the biodiversity spectrum – from water for industry to pollinating insects for agriculture. The JSE-listed companies, from a wide range of sectors, are being supported by the project team to do an assessment of the current levels of biodiversity in their strategies and activities.

'The toolkit notably provides businesses with a standardised, cross-sector biological diversity protocol (BD protocol), which helps businesses to consolidate biodiversity impact data at the corporate level for disclosure purposes. This way businesses can start looking after biodiversity, including doing aspects of business differently,' says WWF-SA finance sector specialist, Wendy Engel, who is leading the project with the Endangered Wildlife Trust's Dr Joël Houdet.

Houdet explains that deciding on the biodiversity policy of your business is about determining which biodiversity dependencies and impacts are material to your operating environment and stakeholders. A biodiversity dependency or impact is material if it is considered to have the potential to alter your business's decision-making process: material impacts and dependencies should be actively managed.

'JSE-listed companies were selected as they currently report on environmental risks and practices in their annual integrated reports,' Engel explains. 'At present, very few companies provide a detailed assessment of their biodiversity impacts and risks. The BD protocol supports companies in measuring, monitoring and reporting on their biodiversity performance.'

Given the unprecedented levels of biodiversity loss worldwide, as detailed in the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services and SANBI's National Biodiversity Assessment, businesses need to step up their biodiversity game more than ever. This project is catalytic for South African business and biodiversity and takes South Africa another step forward into a more climate secure future.

Biodiversity and the Sustainable Development Goals

Biodiversity is a key component of the sustainable development agenda, nationally and internationally. The United Nations Sustainable Development Goals (SDGs) prioritise the connection between environment and development by integrating sustainability in all 17 of the goals. More specifically, SDG 14 (Life below water) and SDG 15 (Life on land) make biodiversity a top priority on the international development agenda. Healthy ecosystems are recognised as being the foundation of climate change mitigation, poverty reduction and sustainable development.

30 Years of the WWF Nedbank Green Trust

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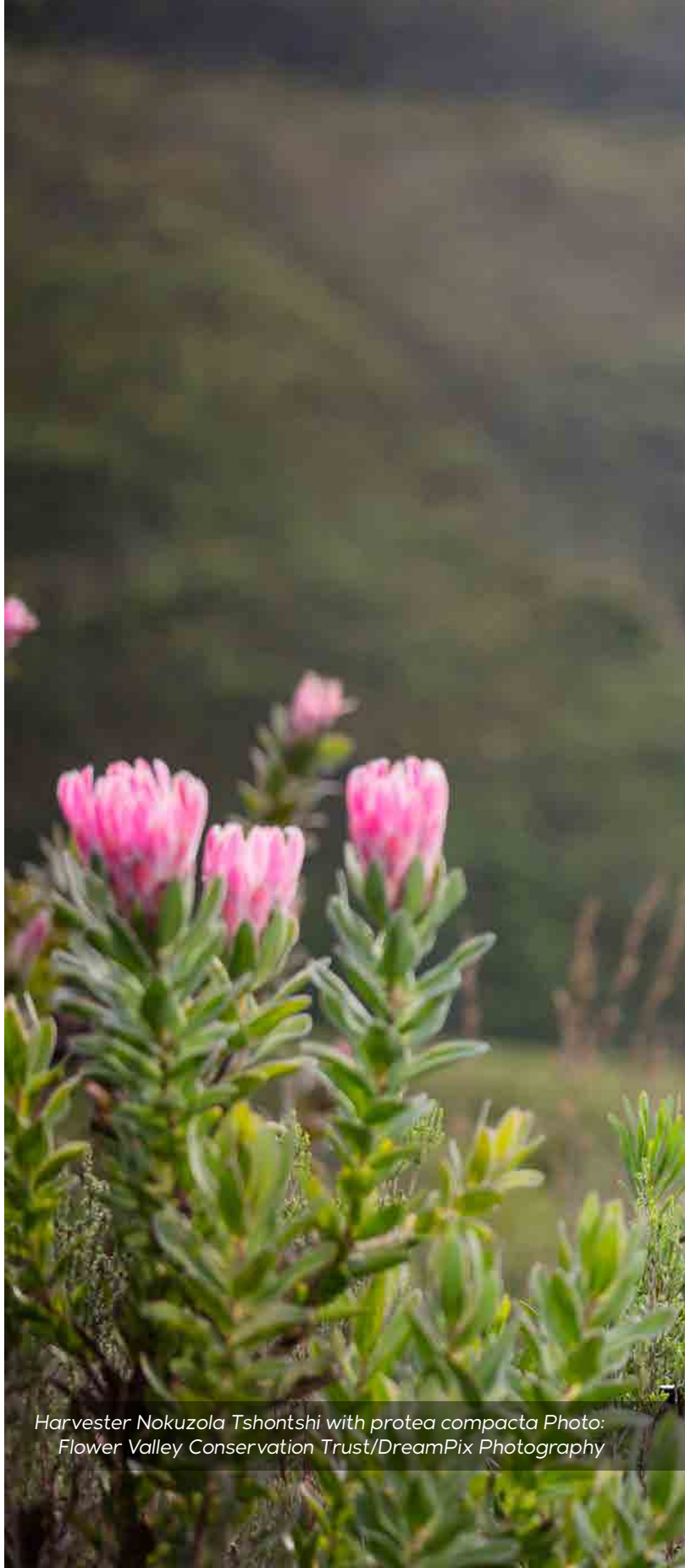

Harvester Nokuzola Tshontshi with protea compacta Photo: Flower Valley Conservation Trust/DreamPix Photography

30 Years of Foresight and Change

Harvester Nokuzola Tshontshi with protea compacta
Photo: Flower Valley Conservation Trust/DreamPix Photography

30 Years of the WWF Nedbank Green Trust

In 1990, at a time when few companies were talking 'green', Nedbank recognised the centrality of the natural environment; that it underpins everything we are – the lives we live, the food we eat, the water we drink, the air we breathe, our economies, and our livelihoods. This led to their pioneering partnership with WWF-SA to create the WWF Nedbank Green Trust and put in place Africa's most sustainable, dynamic mechanism for supporting environmental issues at a time when there was no such understanding in the business world.

Thirty years later, in 2020, the WWF Nedbank Green Trust celebrates three decades of funding catalytic projects that have brought real change to the lives of South Africans and to the natural environment on which we all depend. The Trust is funded through the Nedbank Green Affinity Programme, which has raised more than R300 million for over 200 community-based conservation projects, some of which are featured in this 30th anniversary book.

The WWF Nedbank Green Trust's slogan, Igniting new ways for people and nature to thrive, has never been more relevant or imperative than it is today.

As the CEO of WWF-SA, Dr Morné du Plessis says: 'We have hit the limits of our ecological boundaries, or what nature can provide. Many key role players in government and society should have responded far earlier but hopefully the penny has now dropped about our absolute reliance on the natural environment. Changes need to be implemented as a matter of urgency, and the work of the WWF Nedbank Green Trust should be acknowledged as an essential service.'

The CEO of Nedbank, Mike Brown adds: 'This era's agenda is the call for massive change at a systemic level. We need real change in a relatively short space of time to our energy sector, our transportation sector, our food systems and our built environments. We have to respect and preserve our natural systems.'

Vassi Naidoo, Chairman of both the Nedbank Group and the WWF Nedbank Green Trust adds: 'The Covid-19 pandemic has laid bare the many challenges we face on the continent and internationally. Many more people are facing food insecurity, many more are without jobs, and there is less capital available to invest in addressing the inequities in society. That said, there is a way forward as all these issues are named, with targets set for addressing them in the Sustainable Development Goals (SDGs). The goals define what a prosperous, more equitable future looks like. They define a world that respects all people and natural resources, and it is only by pursuing both that we give ourselves a fighting chance for a prosperous future for all.'