FINANCING BIODIVERSITY IN THE FACE OF CAPITALIST EXTRACTIVISM AND ECOCIDE

Comments on the South African government's Biodiversity Finance Plan

AFRICAN CENTRE FOR BIODIVERSITY

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The African Centre for Biodiversity (ACB) is committed to dismantling inequalities and resisting corporate industrial expansion in Africa's food and agriculture systems.

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Acronyms

ACB	African Centre for Biodiversity
AFOLU	Agriculture, forestry, and other land use
BFP	Biodiversity Finance Plan
CBD	Convention on Biological Diversity
CDM	Clean Development Mechanism
CMA	Catchment Management Agency
DEA	Department of Environmental Affairs [now DFFE]
DFFE	Department of Forestry, Fisheries, and the Environment
DWS	Department of Water and Sanitation
EPWP	Expanded Public Works Programme
FAO	Food and Agriculture Organisation of the United Nations
GBF	Global Biodiversity Framework of the Convention on Biological Diversity (CBD)
GDP	Gross domestic product
GHG	Greenhouse gas
GS	Gold Standard
IAP	Invasive alien plant
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
LUI	Land User Incentives
NRM	Natural resource management
PA	Protected area
PDI	Previously disadvantaged individual
SARS	South African Revenue Service
SDGs	Sustainable Development Goals
SMMEs	Small, medium, and micro enterprises
UNDP	United Nations Development Programme
VAT	Value-added tax
VCS	Verified Carbon Standard
ZAR	South African Rand

Key messages

- The human species faces a multi-faceted crisis of civilisation, with environmental, social, and economic dimensions. Fundamentally, this crisis is caused by capitalist dynamics of accumulation and extraction and the associated use of the environment as a free or cheap resource and service provider. Centuries of this approach to the human relationship with nature have caught up with us. Recognition of the need for rapid and systemic change is widespread and is explicitly stated by numerous scientists and United Nations agencies alongside the voices of indigenous and other communities globally.
- Effective biodiversity restoration and conservation requires a fundamentally different relationship with nature than the present one of domination, violence, and extraction.
- Biodiversity restoration and conservation are unfortunately caught up in the broader imperative of profit-making and capital accumulation, with efforts to convert necessary interventions into sites for further capitalist accumulation. This must be resisted, and the only way to do so is to deliberately and systematically rebase economic activity to place primacy on the production of use values over profit and accumulation.
- The Biodiversity Finance Plan (BFP) attempts to identify ways to secure adequate resources to carry out essential biodiversity work. But it falls into the trap of 'environmental pragmatism' that does not offer a systemic way out of the crises facing us.
- The BFP identifies 16 priority finance solutions aligned with national biodiversity priorities.
- These solutions can be clustered into five potential sources: incentives and subsidies (which can leverage private sector resources); taxes and penalties; public sector core funding; market-based interventions; and global funds.

- ***Incentives and subsidies*** included in the BFP are biodiversity tax incentives, natural resource management (NRM) land user incentives, and protected area (PA) property reform. These are limited in that they accept the private ownership of land and productive assets and, in effect, reinforce these. However, they may have a role in leveraging a greater (statutory) private sector contribution to biodiversity and wider environmental activities.
- Additional interventions that should be considered in more detail include reducing or eliminating specific harmful subsidies to fossil fuels, mining, and industrial agriculture while retaining and extending access to energy and food for marginalised and disadvantaged populations and reallocating a share of farm input subsidies towards biodiversity-friendly production inputs.
- The Department of Forestry, Fisheries, and the Environment (DFFE) should include Global Biodiversity Framework (GBF) Target 18 on harmful subsidies in South Africa's revised National Biodiversity Strategy and Action Plan (NBSAP).
- The best way to reduce harmful subsidies that can generate revenue for biodiversity conservation is by removing exemptions from carbon taxes.
- ***Taxes and penalties*** are the 'stick' that compels users to contribute to biodiversity conservation measures and penalises poor practices or non-compliance. Currently, penalties are too low for the damage the actions cause, and systems are not well enforced.
- Water tariff reform to allocate a share of tariffs to ecological maintenance has great potential to generate a significant share of the required resources, but catchment and water management systems and institutional arrangements need to be strengthened for effective functioning.

- A tourism conservation fund is proposed based on a levy on private sector actors. This already has some support from the tourism industry and should be developed and implemented without delay.
- Non-compliance with biodiversity and related laws and regulations must be effectively disincentivised through a significant increase in maximum fines.
- Carbon tax rates should be increased substantially in line with the social cost of carbon, and tax exemptions should be reduced and phased out on a rapid timeline.
- Biodiversity and carbon offsets are false solutions that have demonstrably failed to stem a reduction in greenhouse gas (GHG) emissions or biodiversity loss and result in further commodification of nature and encroachment of the financial sector into the environment. A moratorium should be called on the use of these instruments pending a full review and assessment of their actual impacts on the environment to date.
- There is a key role for ongoing ***public sector financing***. Biodiversity restoration and conservation are a public good essential for a sustainable economy. Interventions should not be held ransom to profit-making. The primary question is where these public funds are to come from.
- There is a strong case for public investment in biodiversity. On a purely economic basis, South Africa's biodiversity offers ecological services worth an estimated ZAR 275 billion to ZAR 333 billion to the country's economy. For each job created to protect biodiversity, five jobs depend directly on using biodiversity. This is aside from multiple significant and ongoing non-economic environmental benefits of biodiversity restoration and conservation.
- Investment in management, monitoring, and enforcement capacity is potentially the best use of public sector resources if penalties for poor practice and non-compliance are sufficiently severe. This can result in increased revenues for conservation authorities and benefits to local communities from biodiversity conservation and PAs.
- Public sector biodiversity and conservation budgets are set to stagnate or decline over the medium term as part of wider austerity. The result is insufficient resources to implement even an attenuated NBSAP.
- The government should consider an urgent redistribution of material resources through significantly higher progressive taxation, wealth caps, expropriation of resources above the cap and, ultimately, social ownership and democratisation of financial institutions and key industries and their reorientation towards the common good.
- ***Market-based*** solutions include increasing revenues from user fees for access to national and provincial parks, commercialisation of services in parks, and revolving land trust schemes that seek to set up new PAs for eventual privatisation. However, these solutions may have the effect of further alienating the majority of the population from the land.
- Ecotourism, small-scale fishing, and mass cultivation of indigenous plants for commercial land restoration and medicinal and nutritional uses are examples of market-based approaches that could add environmental, economic, and social value, especially if they promote small enterprises and the livelihoods of marginalised and disadvantaged individuals and communities.
- Biodiversity stewardship programmes offer a potentially comprehensive intervention that can leverage private resources to benefit biodiversity restoration and conservation. However, this requires ongoing public sector support to underpin the programmes.
- There is limited potential to access ***global climate and biodiversity funds*** to support biodiversity actions. However, these funds are not delivering the quantity of resources promised, and this route may not be reliable in securing sufficient financing for biodiversity work. Further, climate financing mostly takes the form of debt/loans.

Recommendations

Practical steps to secure resources must acknowledge the current context of capitalist dominance and private ownership of land and productive property. At the same time, they must be designed to open lines of escape from this straitjacket being imposed on the possibilities for biodiversity restoration and conservation. Care should be taken to design interventions that do not reinforce or entrench these limits.

Incentives and subsidies

There is huge potential in reducing harmful subsidies to fossil fuels, mining, and conventional agriculture and switching a share of these to biodiversity-friendly practices in energy and agriculture. This is already explicitly included in global agreements to which the South African government is a party, including the Sustainable Development Goals (SDGs) and the GBF.

Care should be taken to ensure subsidy reform strengthens access to energy and food for marginalised and disadvantaged individuals and communities while eliminating subsidies to large-scale commercial operations in these industries.

If done properly, subsidy reform could more than cover the required costs of biodiversity restoration and conservation and other environmental interventions, aside from the direct benefits to environmental and human health of reducing harmful economic practices and supporting environmentally and socially beneficial economic practices.

Taxes and penalties

Taxes and penalties are a means of redistributing resources from their concentration in private hands towards democratically controlled public goods and services. This is part of apartheid redress but has not been tackled at the necessary scale.

The BFP's emphasis on water tariff reform as a key source of funds is appropriate but requires more effort in constructing democratic, effective, and accountable catchment management and water user institutions.

Increase maximum fines for contravention of biodiversity laws and regulations to make them a real disincentive. Fines should be linked to a percentage of turnover or profit, as the Competition Commission is already doing.

Adopt a 'social cost of carbon' approach by internalising the currently externalised environmental, social, and economic future costs of GHG emissions and phase out or significantly limit exemptions to the carbon tax in a rapid timeframe.

Adopt the precautionary principle regarding carbon and biodiversity offsets, and place a moratorium on their use to allow for a review of the extensive literature on their impacts and assessment of their actual reduction in GHG emissions and on stemming biodiversity loss and restoring ecosystems integrity, globally and in South Africa.

Public sector financing

Focus on effective management, monitoring, and enforcement of laws and regulations, coupled with significantly increased taxes and penalties for contraventions. In combination, these investments can generate the necessary resources required to support the implementation of an expansive NBSAP (i.e. one that adopts all the GBF targets relevant to the South African context and not only a selected few to fit within a limited budget) and other related environmental interventions. Consolidate integration with other public sector resources that relate to biodiversity, including the Expanded Public Works Programme (EPWP) and investments in ecological infrastructure and sustainable water resource management.

Implement interventions for the urgent redistribution of material resources through significantly higher taxes, wealth caps, expropriation of resources above the cap, and, ultimately, social ownership and democratisation of financial institutions and key industries and their restructuring and repurposing to serve the common good.

Global finance

Securing adequate resources from polluters and significant beneficiaries of environmentally damaging economic activities requires strong global coalitions to assert the ethical call for fully resourced loss and damage funds. The South African government should resist approaches that require countries to take on debt to pay for the necessary responses to climate change and biodiversity loss, and this can be linked to a call for wider reparations for Africa in the face of slavery, colonialism, and ongoing resource extraction.

Introduction

The African Centre for Biodiversity (ACB) welcomes the opportunity to engage with the Department of Forestry, Fisheries, and the Environment (DFFE) on finding resources to support biodiversity conservation and sustainable use in South Africa. We support the White Paper on Conservation and Sustainable Use of South Africa's Biodiversity in its vision to realign the relationships between humans and the environment in which we live. We also support the transformative approach, which says that individuals and populations marginalised by capitalism, racism, and patriarchy should be placed at the centre if we are to realise any just and sustainable solutions. We recognise the immense damage the capitalist system has wrought on the environment and people, driven by profit-seeking and endless accumulation at all costs. South Africa is the third most biodiverse country globally, but about half of the assessed ecosystems are threatened, with inland wetlands and estuaries most at risk, posing a threat to multiple sectors including agriculture, forestry, and fishing (UNDP SA, 2022:14). We believe that a comprehensive, systemic response is essential to stem the frightening loss of biodiversity, the consequent loss of ecosystem resilience, and the threats to the survival and welfare of the majority of the population.

In these times of adverse climate change impacts, humanity will be very dependent on the ability of the ecosystems of which we are part to enable us to adapt as a species and be more resilient in the face of unpredictable survival conditions. To ensure that ecosystems can cradle humanity, biodiversity loss must be stemmed and reversed, and biodiversity restored and expanded. This requires a fundamentally different relationship with nature than the present one of domination, violence, and extraction. Efforts to control nature may succeed in the short term here and there, but in the longer term, humanity will suffer – and is already suffering (albeit unevenly and inequitably) – the consequences of this imperious attitude.

In this light, we approach the issue of financing for biodiversity with some trepidation. This is because the framing contains efforts at biodiversity conservation and restoration within a capitalist worldview where external funds (often with a profit premium) must be raised to support biodiversity protection. Capitalist markets are manifestly unable to mobilise the necessary support for biodiversity and environmental protection, while at the same time, they are inevitably degrading biodiversity and ecosystems. As such, market-based efforts are doomed to failure. This is very dangerous in the context where, according to the World Economic Forum (WEF), around half of the global gross domestic product (GDP) (approximately US$ 44 trillion a year) is directly dependent on nature and its services (WEF, 2020). In reality, economic activity that does not directly depend on nature will also be impaired should the natural base disintegrate significantly.

We recognise that DFFE is caught in a very difficult situation. On the one hand, it recognises the imperative of altering our relationships with nature and protecting and acting to conserve and regenerate biodiversity. On the other hand, DFFE (as we all do) operates in a dominant economic system that only recognises nature and biodiversity as free (or cheap) resources to generate profits. This results in DFFE being compelled to adopt an approach that seeks to make biodiversity conservation and sustainable use pay their way as if they are just another economic sector that will attract investments only to the extent that these generate profits. Even public sector funding is not guaranteed, and the biodiversity sector is forced to "compete with alternative uses of funding" and lobby the Treasury for greater allocations (DEA, 2017:36) by making a business case for biodiversity conservation and sustainable use. It is within this very narrow framing that the Biodiversity Finance Plan (BFP) has been constructed.

In the BFP, the authors make a valiant effort at a business case. The capitalist economy long ago established that the only business case for biodiversity is as a free or cheap resource to fuel economic growth, profit, and accumulation. The resistance to any alteration to this relationship and the role of biodiversity as a free resource is apparent in the actions and inactions of financial institutions and corporations that dominate the economy, globally and nationally. International agreements such as the Convention on Biological Diversity (CBD)'s previous Aichi Targets and the current GBF can come up with some good ideas and plans, but these are routinely ignored without consequence, while others that favour financialisation, the commodification of nature, and capital accumulation are pursued with vigour.

A 2019 Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) global assessment on biodiversity and ecosystem services has argued that conservation and sustainable use goals cannot be met unless there is a "fundamental system-wide reorganisation across technological, economic and social factors, including paradigms, goals and values" (IPBES, 2019:33). Ultimately, biodiversity conservation and sustainable use must be removed from the economic calculus. Instead, however, given the vast economic and social power imbalances today, those advocating for conservation and restoration are compelled into the logic of profitability.

Financial institutions and corporations should be socialised for successful long-term biodiversity restoration, conservation, and sustainable use. The accumulated resources under their control (secured through violence and expropriation in the past and the present) should be allocated based on rational and transparent planning emerging from collective, informed, and democratic decision-making. In this way, the struggle for biodiversity conservation and sustainable use cannot be separated from wider political and economic struggles for the true emancipation of humanity. However, this promise of the struggle against apartheid has failed to materialise.

Of course, this goal is very far from where we are now. But it will stand us in good stead if we keep in mind a bigger vision and consider, when identifying options for financial support, in which direction those options may take us. Will they bring us closer to a more rational, just, and sustainable allocation of resources and democratic participation, or will they tighten the noose of financialisation and extractivism and deepen the rift between humans and nature?

Overview of selected finance options

Biodiversity outcome	Finance solution	Expected financial benefits 2017–2026 (R'm)
Protected areas (PAs)	PA own revenue	1,226
	Property rates reform for PAs	1,253
	Biodiversity tax incentives	1,430
	Biodiversity offsets	1,285
	Making the case for PA public spending	1,148
	Revolving land trusts	848
Ecosystem restoration	Natural resource management (NRM) value-added industries	1,177
	Global climate change funds	621
	Water tariff funding	4,679
	Government grants for ecological infrastructure	Not quantified
	Carbon tax offsets funding	351
	NRM land user incentives	1,371
Sustainable utilisation	Biodiversity economy strategy	Not quantified
	Tourism conservation fund	862
	Biodiversity-related fines and penalties	Not quantified
Cross-cutting	Biodiversity stewardship programmes	Not quantified
Total		**16,251**

Table 1: Proposed finance solutions in the BFP with expected financial benefits, 2017-2026
Source: DEA, 2017

In the BFP, 64 potential finance solutions were considered and screened down to 16 priority solutions. Two of these latter are broad programmes of work, viz., biodiversity stewardship programmes and a biodiversity economy strategy (DEA, 2017:21). The shortlisted solutions are clustered into the biodiversity outcomes in the BFP (Table 1).

Expected financial benefits are indicated for twelve of the proposed interventions, where a quantitative benefit assessment was possible, at an estimated ZAR 16.25 billion over the decade 2017–2026. It would be of value to check the actual returns on these strategies to the end of 2023 when the cumulative benefits to that date were estimated to be ZAR 7.5 billion. Were these gains realised? If not, why not?

Water tariff funding reform offers the highest yield, at an estimated 29% of the total financial gain over the ten years. A cluster of other actions is estimated to yield around 7%–8% each of the total financial gain. These are biodiversity tax incentives, NRM land user incentives, biodiversity offsets, PA property rates reform, PA own revenue, NRM value-added industries, and making the case for public sector PA funding. Scaling up biodiversity stewardship programmes is considered to encompass all the biodiversity outcomes. However, the BFP does not quantify potential benefits.

The BFP argues for a need to shift greater responsibility for financing to those who benefit the most from biodiversity protection, in particular land users (land user incentives programme), water consumers (water tariff allocations), and heavy GHG emitters (carbon tax offsets) (DEA, 2017:28).

To facilitate analysis, we have clustered the proposed financial solutions into five potential sources:

- Incentives and subsidies
- Taxes and penalties
- Public sector core funding
- Market-based funding
- Global funds

Incentives and subsidies

Incentives and subsidies offer a 'carrot' for good practice. However, current subsidies across several sectors incentivise environmentally damaging practices (ACB, 2024). These need to be phased out or gradually reallocated to incentivise biodiversity-friendly practices. There are two elements to this. First, public expenditure can be saved by reducing harmful subsidies and incentives that can be reallocated elsewhere, including biodiversity conservation. Second, the negative impacts of economic activities on biodiversity can be directly reduced through disincentivising harmful practices, thereby realising the objectives of reducing biodiversity loss and supporting its restoration and maintenance.

Incentives and subsidies included in the BFP are biodiversity tax incentives, NRM land user incentives, and PA property reform. We have no specific comments on these three options. The solutions seem reasonable, especially if they are linked to well-capacitated and well-functioning biodiversity stewardship programmes, as the BFP suggests.

Additional interventions that we propose include reducing or eliminating harmful subsidies to fossil fuels, mining, and industrial agriculture and reallocating a share of farm input subsidies towards biodiversity-friendly production inputs.

Biodiversity tax incentives

Biodiversity tax benefits can contribute to increasing the area of private land under responsible land management. The BFP indicates that private PAs are an extremely cost-effective way of expanding and managing PAs. The proposition is to create tax benefits for converting private land into formal PAs and signing formal biodiversity stewardship agreements.

A cost-benefit analysis must consider foregone taxes, including those from alternative land uses (DEA, 2017:51). On the positive side, tax incentives do not require a direct capital outlay from the government. However, communal land and low-income landowners are unlikely to benefit from income tax deductions and may require a direct subsidy (DEA, 2017:52).

NRM land user incentives

> ***Ecosystem restoration on privately or communally owned land is a priority, as delayed action will increase the scale and cost of remediation, water stress, exposure to natural disasters, and related adverse effects. Based on early success, DEA-NRM seeks to scale up the LUI [Land User Incentives] programme to mobilize a greater contribution from the private sector for ecosystem restoration, while continuing to create jobs through the NRM work. (DEA, 2017: vii)***

Financing for NRM can come from accessing existing government grants and funds (e.g. the Jobs Fund or the EPWP) and scaling up DFFE's NRM LUI programme to increase private sector contributions to invasive alien plant (IAP) clearing.

The NRM LUI programme can apply to private or communal land. It takes the form of a public-private partnership. Catchment Management Agencies (CMAs) could use water tariffs for direct IAP clearing (DEA, 2017:76). The aim is to increase the private sector contribution from 30% to 85% of costs and to increase the coverage of clearing on private land through the programme from 10% to 85%. The BFP proposes to use penalties (enforcing existing legislation on IAP clearing) and incentives. It should be noted that it is the landowner's statutory responsibility to ensure control of IAP on private land. There is a great potential for income from value chains for biomass generated from clearing. However, operational improvements are required to scale up effectively (DEA, 2017:77).

Protected areas property rates reform

Some PAs are burdened with substantial property rates because of ambiguities in the Municipal Property Rates Act. This solution aims to align better the application of municipal rates policies concerning concessionary rates for PAs and botanical gardens. This means resources allocated by the PAs and gardens for these taxes can be used for other biodiversity-related activities.

We note that communal land is considered as part of private PAs. The latter constitute around 30% of South Africa's terrestrial PA estate (DEA, 2017:10).

We have no specific comments on these three options. The solutions seem reasonable, especially if they are linked to well-capacitated and well-functioning biodiversity stewardship programmes (see page 33), as the BFP suggests.

Other incentive-related options: Eliminating or redirecting harmful subsidies

Additional options for incentives and subsidies to contribute to stemming biodiversity loss and restoring and maintaining biodiversity are eliminating subsidies harmful to biodiversity and their reallocation towards biodiversity-friendly practices. The possibility of this is mentioned in the BFP, with an indication that financial solutions could result in "realigning neutral or harmful expenditure (such as adjusting agricultural subsidies to support green agriculture)" (DEA, 2017: iii). However, the BFP doesn't take this suggestion any further. We elaborate on aspects of these options below.

The World Trade Organisation (WTO) Article 1 of the Agreement on Subsidies and Countervailing Measures defines a subsidy as any of the following:

- direct and indirect transfers of funds and liabilities
- government revenue foregone (tax rates and exemptions)
- provision of goods and services below market value
- income and market support through market regulation (including non-enforcement)

SDG 12.c.1 also uses the WTO definition (Bridle et al., 2022:3).

There are two types of harmful subsidies: those that underprice the use of natural resources and those that aim to increase production, leading to more environmental damage. The monetary size of a subsidy does not necessarily correspond to the extent of harmful effects. It is important to understand the extent of the negative impact of a subsidy on biodiversity. This requires detailed quantification, which may be difficult due to the inherent complexity of biodiversity. Quantifying externalities is challenging because it involves assigning financial value to non-financial impacts. It is difficult to determine causality with precision. Location-specific biodiversity data is needed but is mostly unavailable. In the face of this uncertainty, a precautionary approach is recommended (i.e. don't wait for detailed proof of negative biodiversity impacts before acting) (UNDP BIOFIN, 2024:19).

The 2019 IPBES assessment of biodiversity and ecosystem services noted that "economic incentives have generally favoured expanding economic activity, and often environmental harm, over conservation or restoration" (IPBES, 2019:14). The GBF's Target 18 calls for governments to:

> ***identify by 2025, and eliminate, phase out or reform incentives, including subsidies, harmful for biodiversity, in a proportionate, just, fair, effective and equitable way, while substantially and progressively reducing them by at least $500 billion per year by 2030, starting with the most harmful incentives, and scale up positive incentives for the conservation and sustainable use of biodiversity (CBD, 2022:12).***

Globally, environmentally harmful subsidies are valued at 2% or more of GDP (UNDP SA, 2022:12).

Caution must be exercised when reviewing subsidies and considering action because much of the discussion focuses on inefficient subsidies, which are not identical to harmful subsidies. The latter also tends to focus on the environmental aspects alone. A superficial consideration of subsidies potentially opens the door for removing government price support to poorer consumers (e.g. energy and food subsidies or price controls). The social costs and benefits must, therefore, also be considered. A comprehensive cost-benefit analysis is needed when assessing harmful subsidies and the scope for reducing or reallocating them to more environmentally friendly practices. While it is essential to protect (and even increase) energy and food subsidies to poorer households, how energy and food are produced could be a focus for change (e.g. from fossil fuels to renewable sources or from conventional to agroecological production techniques). In this way, harmful subsidies could be reduced while retaining the benefits for those in need.

In South Africa, three sets of subsidies stand out for their negative impacts on biodiversity. These are energy, mining, and agricultural input subsidies. Most published studies have focused on energy subsidies and lump consumer and producer subsidies together.

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Fossil fuel subsidies

The link between climate change and biodiversity loss is well-established. Thus, a significant reduction in GHG emissions will reduce biodiversity loss (IPBES, 2019; IPCC, 2022). The energy sector in South Africa is by far the largest source of GHG emissions, at an estimated 81% of the total (DFFE, 2022). SDG 12 on sustainable production and consumption includes Target 12.c to rationalise "inefficient" fossil-fuel subsidies. The CBD's Aichi Biodiversity Target 3 aimed to phase out or eliminate incentives and subsidies harmful to biodiversity. However, only 21% of NBSAPs globally contained a target that matched or exceeded the Aichi target (CBD, 2020:6). South Africa's own NBSAP 2015–2025 does not include this target at all (DEA, 2015). As indicated above, the GBF's Target 18 reaffirmed the target, revealing its continued importance. More recently, African Union members have committed, among other actions, "to reverse land degradation and restore soil health on at least 30% of degraded soil by 2034 through … innovative incentive mechanisms – including repurposing current subsidy programs – to encourage soil health investments by smallholder farmers" (AU, 2024).

In South Africa, the Presidential Climate Commission's Just Transition Framework calls for the gradual elimination of perverse and/or regressive subsidies that do not support a just transition (PCC, 2022:25). The first thing DFFE can do is include GBF Target 18 in the revised NBSAP. South Africa has committed to phasing out inefficient fossil fuel subsidies but claims that currently, there are no inefficient fossil fuel subsidies that encourage wasteful consumption (Bridle et al., 2022:8). This is an example of where inefficiency and environmental damage are two different criteria on which to assess the impact of subsidies.

The South African government directly supports the production and use of fossil fuels by supporting coal-fired electricity (Eskom) and converting coal into liquid fuels (Sasol), as well as indirectly through supporting infrastructure. Subsidies take many forms, including tax reductions, interest-free loans, insurance, and infrastructure development. There is no systematic inventory of subsidies and beneficiaries, thus the actual amount remains unknown (Rennkamp et al., 2018:2). The main form of subsidy is infrastructure support for coal mining, including transport infrastructure (roads and rail). These are not referred to as "fossil fuel production subsidies" but are instead couched in the language of "vital" or "strategic" investments towards economic development. However, the main beneficiaries are corporations and politically connected elites in the mining sector. Incentives are often hidden and unspoken. Rules were made long ago under apartheid and persist. Eskom bailouts in the form of interest-free loans to recommission mothballed coal plants and finance two new coal power stations are not perceived as "fossil fuel subsidies" by the government (Rennkamp et al., 2018:10–12). The basic function of supply-side subsidies is to reduce the risks for fossil fuel producers. These mainly take the form of interest-free loans to reduce the cost and risk of new plants. These subsidies are harmful because they undermine efforts to reduce emissions to slow climate change and sustain clean air and water (Rennkamp et al., 2018:4).

In 2020/21, energy subsidies in South Africa were estimated at ZAR 172 billion, including subsidies to fossil fuels, electricity, hydroelectricity, nuclear, carbon tax exemptions, and bailouts of carbon-intensive industries. The societal costs of fossil fuel subsidies in South Africa are estimated at ZAR 550 billion annually, even before taking into account the negative biodiversity impacts (UNDP SA, 2022:13). The social cost of fossil fuels is calculated based on estimates of total deaths, working days lost and GHG emissions (Bridle et al., 2022:5). The figure is conservative as it only considers fossil fuel combustion.

Estimated social costs of fossil fuel combustion in South Africa (Bridle et al., 2022:32):

- Mortality: 13,000 deaths at an estimated social cost of ZAR 224 billion
- Morbidity: 997,000 working days lost from coal combustion only, at an estimated social cost of R42.9 billion
- Climate change: 429.9 million t/CO_2e (tons per carbon dioxide equivalent), at an estimated social cost of ZAR 283.3 billion (with carbon priced at ZAR 657/ton, which is at the lower end of the Paris Agreement range to accommodate South Africa's developing country status and "differentiated responsibilities").

A comparison of social costs and revenues reveals that social costs are five times higher than revenues. This could be understated because only three externalities are considered. Subsidies are also greater than revenues generated (Bridle et al., 2022:33).

The major quantified energy subsidies in South Africa (Bridle et al., 2022:9–10) are:

- Provisional allocations for Eskom restructuring (ZAR 105 billion 2019/20–20/21)
- Exemptions from carbon tax (ZAR 69.33 billion 2019/20–20/21)
- Value-added tax (VAT) exemptions for sales of gas, diesel, and paraffin (subsidy on the consumption of fossil fuels) (ZAR 63.94 billion 2019/20–20/21)
- Free basic electricity access (ZAR 22.26 billion 2019/20–20/21)
- Recapitalisation and bailouts of SAA (ZAR 15.8 billion 2019/20–20/21)

The majority of subsidies are through direct transfers (including bailouts of state-owned enterprises) (40%) and foregone revenue from tax exemptions (37%), then income or price support (16%), then provision of goods and services below market value (7%) (Bridle et al., 2022:11).

The list of existing subsidies shows the importance of breaking the subsidies down into different categories. Government decisions to allocate funds for Eskom restructuring (ZAR 254 billion allocated for 2023–26) may be necessary, but they also indirectly contribute to the lock-in of fossil fuel production. They could and should be made contingent on a shift towards improved environmental practices, especially reductions in GHG emissions (Geddes and Schmidt, 2023). Support for Eskom translates into "underpriced" electricity to energy-intensive industries. At the same time, residential rates have continued to increase (Rennkamp et al., 2022:11). VAT exemptions on fossil fuels and subsidies for basic electricity access should be retained (and even increased) to protect the energy security of poorer households. Still, the subsidies to fossil fuels should gradually be capped, reduced, and replaced with subsidies based on renewable energy sources. It should be noted that consumer energy subsidies are untargeted, meaning higher users benefit more. The state could consider removing consumer energy subsidies but replacing them with a basic income grant that includes (but is not limited to) the current value of energy subsidies. Brazil's Bolsa Familia (family grant) is a successful example of consolidating separate grants into a single grant (Lindert et al., 2007).

The best possible place to reduce harmful subsidies that can generate revenue for biodiversity conservation is the exemption from carbon taxes. Various carbon tax thresholds for different sectors or entities are defined, below which emitters are exempt from paying. There are also additional tax-free emissions allowances, which result in 60–100% of emissions currently being tax-free. These exemptions were estimated to cost the fiscus ZAR 44.63 billion in foregone revenue in 2020/21. The low tax rate was initially set to give significant emitters time to transition. Carbon tax exemptions have allowed coal producers to pay very little for extremely high emissions levels (Bridle et al., 2022:13–14). In 2021, the official carbon price was ZAR 134 (US$ 9.20)/tCO_2e for entities generating emissions above specified thresholds, but the applied rate was only between ZAR 6 and ZAR 48 (US$ 0.40 and US$ 2.90)/tCO_2e (Bridle et al., 2022:26). This should be compared with the social cost of carbon estimated at over US$ 3,000/tCO_2e (Kikstra et al., 2021). Most current subsidy spending is directed at propping up existing energy industries rather than promoting the transition to clean energy (Bridle et al., 2022:16).

Phase 2 of the carbon tax will be implemented from 2023 to 2030. This is the time when these tax exemptions should be removed. DFFE must lobby the Treasury to allocate some of these taxes to biodiversity conservation.

Mining subsidies

Mining deduction allowances have been in place for more than 30 years, from when mining was a much bigger part of the economy. The South African Revenue Service (SARS) Income Tax Act in Sections 12N, 15, 36, and 37A provides upfront deductions for capital expenditure and payments to rehabilitation companies. The stated objective of the deductions is to increase foreign investment, economic growth, and employment. It results in an estimated overall tax reduction of ZAR 17.5 billion. However, in practice, mining revenues and profit margins have increased in the past 10 years while mining employment has shrunk (UNDP SA, 2022:36).

Today, the biodiversity economy and tourism generate more employment than mining in South Africa. Negative environmental impacts of mining include extensive land use change, permanent habitat destruction, and air and water pollution. There are negative human health impacts and negative consequences for the big ecotourism industry. Parts of the subsidy have been in place for 60 years and are protected by entrenched interests.

Scenarios for subsidy reform could include: i) redesigning depreciation to align with the manufacturing industry (simply removing upfront deductions and making them straight line as in other industries); and ii) redesigning the deduction to be contingent on environmental operational performance (UNDP SA, 2022:39). Depreciation benefits mainly accrue to commercial mining operations due to regulatory and accounting complexity, and accelerated depreciation allowances have been found to bias investment towards capital-intensity (UNDP SA, 2022:41). Labour may not support reforms for fear of job losses (UNDP SA, 2022:42) and this would require negotiation. Subsidies are provided for rehabilitation, but the job is ineffective. Mining companies generally do not put enough finances towards rehabilitation. Deductions could be linked to sufficient financing for rehabilitation, as indicated in option 2. The current rehabilitation liability is estimated at ZAR 50 billion (UNDP SA, 2022:43).


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Industrial agriculture and Green Revolution subsidies

The United Nations Food and Agriculture Organisation (FAO) and others have stated that "the intensification of agriculture, driven by a focus on increasing yields and productivity as well as past agricultural support from governments, has led to severe pollution of both land and marine landscapes from synthetic chemical pesticides and fertilizers and the overuse of antimicrobials" (FAO et al., 2021:3). SDG 12 Target 4 calls for "environmentally sound management of chemicals and all wastes". GBF Target 7 calls for governments to:

> ***reduce pollution risks and the negative impact of pollution from all sources by 2030, to levels that are not harmful to biodiversity and ecosystem functions and services, considering cumulative effects, including: (a) by reducing excess nutrients lost to the environment by at least half, including through more efficient nutrient cycling and use; (b) by reducing the overall risk from pesticides and highly hazardous chemicals by at least half, including through integrated pest management, based on science, taking into account food security and livelihoods; and (c) by preventing, reducing, and working towards eliminating plastic pollution (CBD, 2022:10).***

The FAO and others further add that phasing out the most distorting and environmentally and socially harmful producer support is essential (FAO et al., 2021: xiii) but needs to be accompanied by repurposing to reduce inefficient, unsustainable, and inequitable support measures and replace these with support for good practices. This calls for reconfiguration rather than elimination (FAO et al., 2021: xvi).

Flying in the face of international commitments to reduce excessive synthetic fertiliser and toxic pesticide use, commercial agriculture in South Africa still receives a VAT zero-rating on chemical farm inputs, with exemptions in place since 1991 (SARS Value-Added Tax Act No. 89 of 1991, Schedule 2). The stated objective was to reduce the cost of farming inputs. The exemption only applies to producers who are VAT-registered. The result has been an increase in import volumes and a 28% increase in fertiliser use per hectare over the past 20 years (UNDP SA, 2022:20). The zero-rating includes agrochemicals and fertilisers, which constituted over 15% of farm purchases in 2019 at an estimated revenue loss to the state of ZAR 3.2 billion annually (UNDP SA, 2022:21). This has produced inefficient consumption and long-term environmental damage, and has not stemmed food price inflation (UNDP SA, 2022:22).

As the Aichi targets and GBF also highlight, excessive use of synthetic fertilisers and toxic agrochemicals results in pollution through toxic bioaccumulation throughout the food chain, eutrophication in aquatic ecosystems and soil acidification, and an increase in transport emissions resulting from imports (UNDP SA, 2022:23). Currently there are no policy filters to limit the quantities of chemical farm inputs used. South Africa is the destination for at least 28 European Union (EU) chemical inputs banned in the EU. A subsidy that reduces the cost of synthetic chemical inputs discourages the adoption of other more environmentally friendly solutions, including organic fertiliser, biopesticides, and other agroecological approaches (intercropping, companion planting, push-pull, etc). There may be significant consequences for South Africa's biodiversity-dependent ecotourism industry, which contributes ZAR 15 billion to GDP directly and facilitates broader economic activity of ZAR 209 billion (UNDP SA, 2022:24).

Most of the benefits of the zero-rating go to large-scale commercial farmers. However, it also reduces the cost of smallholder conventional farm input programmes. Negative health impacts for consumers and farm workers are estimated to have a human health cost of ZAR 28/ha on which synthetic chemicals are used. On the other hand, subsidies have a relatively negligible impact on the economic efficiency of large-scale commercial farmers. Men are the main beneficiaries of the subsidy, as only 20% of farm owners are women (UNDP SA, 2022:29).

Subsidy reform should be coupled with training programmes on improved agricultural practices. A phase-out may be preferable to avoid price shocks (UNDP SA, 2022:25). Options include:

1. complete removal of the subsidy, with likely outcomes including increased revenue for the state, a reduction in chemical use, but also a potential reduction in agricultural productivity
2. reduction in the subsidy, resulting in increased revenue for the state, a reduction in chemical use, and more ability to calibrate to maintain agricultural productivity
3. maintain a subsidy for biodiversity-friendly inputs, which can result in lower costs for farmers, increased agricultural yields, and reduction of biodiversity loss
4. no subsidy, but a rebate based on efficient use in line with government guidelines, which can result in increased revenue for the state and more state involvement in input decisions, but also more logistical challenges for farmers (UNDP SA, 2022:26–27).

The options could be tailored to target some farmers and retain subsidies for others. Based on a set of criteria, the United Nations Development Programme (UNDP) focuses on scenarios 2 (reducing the subsidy) and 3 (reallocating a portion of the subsidy for biodiversity-friendly inputs). Reducing subsidies without an alternative does not necessarily lead to decreased input consumption, and farmers will carry the cost. For both scenarios, training on sustainable farming practices would be required. Revenues generated from subsidy reductions could, in part, fund the training required for more efficient use (UNDP SA, 2022:28). Scenario 3 could offer farmers cheaper inputs with less negative impact on biodiversity. It is an opportunity to reduce dependence on imports and create local jobs, as there are strong prospects for the growth of organic input industries. This is also labour intensive, and there is room for smallholders and communities to get involved in the input supply chain. The availability of natural inputs is an issue that needs to be addressed by increasing domestic production or regional imports. A phased approach may be ideal to build knowledge and capacity in a structured transition process (UNDP SA, 2022:30-33).

Disaggregated data is difficult to come by, but a review of budgets and expenditures on smallholder farmer support in South Africa from 2010–2020 indicated that around ZAR 20 billion was allocated to the Comprehensive Agricultural Support Programme (CASP) and the Ilima/Letsema programme during this period (ACB, 2018). A significant share of this is allocated to input subsidies of synthetic fertilisers, toxic chemicals, and hybrid and genetically modified seeds (which require herbicides for effective functioning).

GBF Target 10 aims to:

> ***ensure that areas under agriculture, aquaculture, fisheries, and forestry are managed sustainably, in particular through the sustainable use of biodiversity, including through a substantial increase of the application of biodiversity-friendly practices, such as sustainable intensification, agroecological and other innovative approaches, contributing to the resilience and long-term efficiency and productivity of these production systems, and food security, conserving and restoring biodiversity and maintaining nature's contributions to people, including ecosystem functions and services (CBD, 2022:10).***

GBF Target 18, mentioned above, calls on governments to "scale up positive incentives for the conservation and sustainable use of biodiversity" (CBD, 2022:12).

This could be achieved by reallocating even a portion of farm input subsidies towards biodiversity-friendly inputs to reduce toxic chemical use and excess nutrients (mainly nitrogen and phosphorous). Globally, just over one-third of applied nitrogen and less than half of applied phosphorous are used by crops. The remainder becomes an environmental pollutant (West et al., 2014). Such a reallocation can also be linked to inclusive economic development through small enterprise production and distribution of ecological inputs (e.g. compost, vermicompost, organic fertilisers, biopesticides, seed, and seedlings). Synergies can be established through a dedicated programme to support small, medium, and micro enterprises (SMMEs) in clearing invasive alien plants and using the biomass for value addition, including compost production and distribution. As indicated in more detail below, there is significant potential to develop this aspect of the biodiversity economy, but these activities are currently inadequately supported, resulting in lost economic opportunities.

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Taxes, penalties, levies, and fees

Taxes and penalties are the 'stick' that compels users to contribute to biodiversity conservation measures and penalises poor practices or non-compliance. Currently, penalties are too low to compensate for the damage the actions cause, and systems are not well enforced. Investment will need to be made in an enforcement capacity, which is expenditure to gain greater resources.

Shortlisted options on taxes, fees, and penalties proposed in the BFP include water tariff reform, a tourism conservation fund, biodiversity-related taxes and penalties, and biodiversity and carbon offsets. These are discussed below.

Water tariff reform

The BFP proposes allocating a portion of water tariffs directly to maintaining ecological infrastructure. Water user associations pay tariffs to the CMAs. In South Africa, this reform alone can yield up to 30% of the funds required for biodiversity conservation and sustainable use. However, the CMA system has not been fully functional after more than 25 years. DFFE will need to work closely with the Department of Water and Sanitation (DWS) to strengthen these institutions and ensure fees are paid and appropriately allocated.

Channelling a portion of water use tariffs to the ecological management of catchments (mountain catchments, wetlands, riparian zones) aligns with the user pays principle. It can improve the availability and quality of water, as well as biodiversity (DEA, 2017:84). Tariffs include a water resources management charge (the DWS's Water Pricing Strategy includes a component for "maintenance and restoration of ecosystems to improve water resources" for planning and implementation and control of IAPs) and water resources infrastructure charges (there is no provision for ecological infrastructure, but total amounts are much larger than management charges) (DEA, 2017:86–87). There is a "need to show that ecological infrastructure solutions will be able to deliver the same or better water benefits than grey infrastructure alternatives, at the same or lower cost", although noting that water benefits are just one part of the benefits of investing in ecological infrastructure.

Comprehensive ecological rehabilitation components can optimise the lifespan and operating costs of new planned water infrastructure. Current NRM programme activities are based on job outcomes because of the focus on public works. However, they also need to address water security outcomes more effectively in catchment management (DEA, 2017:90). Positive outcomes assume good recovery of charges and funds reaching the intended target. Limited evidence on water resource outcomes hampers the acceptance of investment in ecological infrastructure (DEA, 2017:93). It is important to take a much broader view of these investments. While NRM programmes are focused on jobs, a slightly wider focus to include water is still too restrictive. A comprehensive and holistic view of ecological integrity and its multiple benefits across systems and sectors is required to understand the full value of investing here. This still requires acknowledging that the water-related elements must be indicated to allocate water tariffs for this purpose.

Tourism conservation fund

The tourism sector benefits significantly from biodiversity conservation. Currently, the tourism sector makes voluntary rather than statutory contributions. These are open-ended contributions and targeted donations to projects with specific objectives (DEA, 2017:115). The option of a Tourism Conservation Fund is proposed, with levies from the private sector to support conservation efforts in support of ecotourism. According to the BFP, this already has support from the tourism industry and should be established.

Such a conservation fund aims to secure and enhance nature-based tourism assets, using the funds to address targeted biodiversity conservation needs. This includes livelihood diversification support to communities adjacent to PAs, especially increasing opportunities in the wildlife and tourism sectors. “While businesses in the tourism sector benefit from biodiversity, the management of biodiversity does not presently receive adequate compensation” (DEA, 2017:114).

These two options make much sense, as they adopt the user-pays principle (especially those generating profits from use) and ensure the private sector is obliged to make a reasonable contribution to biodiversity conservation activities. It will require collaboration with DWS and the Department of Tourism to secure allocations to ecological infrastructure and biodiversity conservation.

Biodiversity-related taxes, fines, and penalties

The emphasis here is on strengthening enforcement, including the private sector contribution to clearing IAPs. The latter is a statutory responsibility of the landowner, but there are high levels of non-compliance. The BFP indicates that fines and penalties are currently too low relative to the extent of environmental impact. Non-compliance must be effectively disincentivised.

It is hence important to increase the currently very low maximum fines (if they are too low, people will pay relatively small amounts for biodiversity loss and damage without changing their practices), remove caps on fines and link them to turnover or project budgets (as done by the Competition Commission), especially for new infrastructure developments without environmental authorisation; improve compliance monitoring and enforcement; and ringfence fines for use in compliance and enforcement (DEA, 2017:107-111).

ACB's submission to DFFE on the National Environmental Management: Biodiversity Bill 2024 raised concerns about the proposed continued low maximum fines. Penalties for offences listed in section 71 of the Bill are a fine not exceeding ZAR 10 million, 10 years in jail, or both. For offences relating to commercial exploitation, the fine may be up to three times the commercial value of the specimen or activity or the ZAR 10 million fine, whichever is higher. Offences related to alien and invasive species carry the ZAR 10 million/10-year fine, the estimated eradication or control cost, or both. For someone who is of a syndicate, or a state employee convicted of an offence involving priority species, ecosystems, or resources, the fine is up to ZAR 20 million, six times the commercial value, imprisonment up to 20 years, or both a fine and imprisonment.

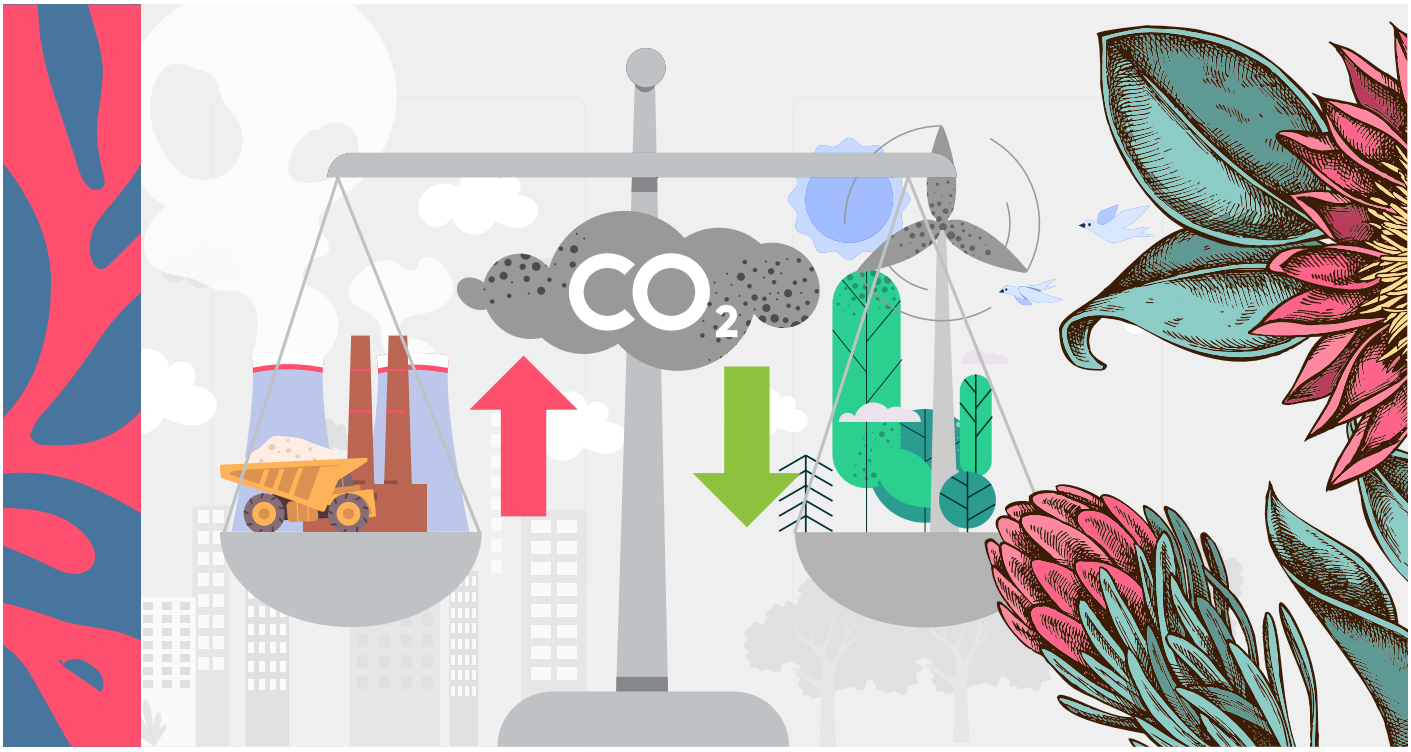
These maximum fines are far too low to be an effective deterrent to those who may stand to make billions from the illegal exploitation or destruction of natural resources. We call for an increase in the maximum fine to ZAR 100 million or 10 years in jail, or both, with the other fines increasing accordingly from this base. An alternative could be a percentage of turnover, as adopted by the Competition Commission. Significant fines can deter those who illegally exploit and damage South Africa's natural resources, and generate income for the state. This could be used for biodiversity restoration, conservation, and sustainable use. While there may currently be human resource and financial constraints to an optimum system (DEA, 2017:112), investing in effective monitoring, inspection, and enforcement capacity may make sense to realise the much more significant potential benefits. This is a 'business case' for increased public sector funding for biodiversity conservation and sustainable use.

The carbon tax offers opportunities for a share of allocations to be directed towards biodiversity conservation and sustainable use, given the strong link between climate change and biodiversity loss. However, the tax rate is set too low, and there are too many exemptions (as indicated in the section on harmful subsidies above). The carbon tax rate is set at ZAR 190/ton CO_2e for 2024 (KPMG, 2024). This is well below the global average, which was ZAR 351/ton a few years ago (De Aragão Fernandes et al., 2023:42). It is also significantly below the Social Cost of Carbon calculated by economists at more than US$ 3,000/ton when externalities and future damages are considered (Kikstra et al., 2021; Bond, 2023). Carbon tax should be significantly increased, and exemptions should be ended. Such a tax should be applied across the economy and at a level proportional to the external cost of the emissions (Bridle et al., 2022: vii). The DFFE should claim a share of these taxes for biodiversity conservation and sustainable use.

Biodiversity and carbon offsets

This is a key area where we must raise a red flag. The biodiversity sector can and must learn from the experiences of carbon credits and offsets, which have not only demonstrably failed to stem GHG emissions but have created the base for commodification and profiteering off emissions. This leads us in the wrong direction. We are aware that offset guidelines have already been developed for South Africa. Still, we urge DFFE to exercise extreme caution when using these false 'solutions', which are unlikely to reduce biodiversity loss effectively or generate revenues for biodiversity conservation.

The BFP proposes two options here. The first is to use carbon offset financing for biodiversity projects, and the second is biodiversity offsets.



Carbon offset financing for biodiversity projects

Finance from carbon offset projects is proposed for use in ecosystem restoration with significant non-carbon benefits (e.g. ecosystem health, improved water flow and quality, increasing the carrying capacity for livestock and wildlife, and job creation, especially in rural areas). There are significant interconnections between climate change and biodiversity loss. Several mitigation opportunities identified for agriculture include clear biodiversity benefits, such as rural tree planting (restoration of subtropical thickets, forests, and woodlands), restoration of degraded lands (mesic grasslands), commercial small grower afforestation, biomass energy, anaerobic biogas digesters, biochar, and reduced tillage. However, there are challenges with financing, monitoring and evaluation, certification, and facilitation (DEA, 2017:95).

Carbon offsets are included in the Carbon Tax Act: "Through investment in carbon-offset projects, entities will be able to fund GHG-reduction measures implemented by other entities to reduce their carbon tax liability, often in a manner that is cheaper than what could be achieved through investment in a firm's actions" (DEA, 2017:97). Schedule 2 of the Act grants an allowance of 5–10% of the tax liability for investment in approved mitigation projects in the energy and industrial processes and product use categories. The offset allowance is set at zero for agriculture, forestry, and other land use (AFOLU) and waste (aside from waste incineration) (RSA, 2019).

The incentive is a cost saving because the cost/ton for offsets is lower than the cost/ton for the tax on qualifying emissions. There is some discussion on whether the offsetting allowance could be increased to 100% of emissions, but "limits are there to ensure that sectors place due emphasis on reducing their emissions before seeking offsets". Verification, additionality (reductions would not have occurred without the project), and standards for AFOLU projects are required, as well as measuring, reporting, and verification tools (DEA, 2017:98). The South African government has adopted pre-existing, internationally recognised standards: the Clean Development Mechanism (CDM), the Verified Carbon Standard (VCS), the Gold Standard (GS), and the Climate, Community, and Biodiversity Alliance standard. Local project developers will be required to adopt methodologies, engage accredited auditors, and validate projects through the specified processes. This is cost-effective for the government but places a lot of risk and costs on project developers. The existing standards are not necessarily well suited to some projects, such as those on grassland restoration or agricultural activity in communal areas (DEA, 2015a). As such, developing functional standards for carbon offsets in South Africa is still ongoing.

The BFP indicates that the availability of a pipeline of ready-to-go restoration projects will facilitate the process. There may be a need for some bridging finance at the start when sequestration may still be low, with high establishment costs but low cash flow

in the initial period because "delivered carbon" will still be coming in (e.g. plants must still grow, resulting in delayed "timing of carbon benefit delivery") (DEA, 2017:99). Use of carbon offset financing will require quantification and verification of emissions reductions and short-term reductions. This use may compete with other, cheaper mitigation projects with limited non-carbon benefits. Carbon offset standards for AFOLU would need to be consolidated to operationalise this (DEA, 2017:94).

Developers generally favour offsets and credits because they allow polluters to continue polluting. "Although offsets are often presented as emissions reductions, these projects move the responsibility for reducing emissions from one location to another, normally from countries in the North to countries in the South. This frequently results in increased emissions whilst also exacerbating social and environmental conflicts" (Carbon Trade Watch, 2009).

There is overwhelming evidence that carbon offsets do not effectively reduce GHG emissions. They are based on ex-ante (before the event) estimates of project emissions reductions, but there is no systematic evidence of achieved emissions reductions. A study of 2,000 offset projects across all major offset sectors, representing a significant share of credits, found that only 12% of the total volume of existing credits constituted real emissions reductions (Probst et al., 2023). Similarly, a report on CDM credits produced by Öko Institut and published by the European Commission found that 85% of projects covered in the analysis were not additional (i.e. they would have happened anyway) or were over-estimated (Cames et al., 2016). Additionality is a "hypothetical baseline scenario" or counterfactual of the situation if the project had not been implemented. It is mainly an extrapolation from historical emissions trends. However, this is an imperfect guide to future emissions, and there is a need for post-ante evaluations of the actual emissions reductions achieved (Probst et al., 2023). A recent report by the Science-Based Targets initiative (SBTi, 2024) stated in no uncertain terms that:

> ***empirical and observation evidence … suggests that various types of carbon credits are ineffective in delivering their intended mitigation outcomes … the evidence suggests that there could be clear risks to corporate use of carbon credits for offsetting. This includes potential unintended effects of hindering the net-zero transformation and/or reducing climate finance … evidence challenge[s] the legitimacy of offsetting claims, arguing that treating carbon credits as fungible with other sources, sinks, or reductions of emissions is inadvisable, illogical, or damaging to global mitigation goals (SBTi, 2024:8).***

Probst et al. (2023) identified some positive co-benefits of some offset projects (e.g. poverty reduction, time savings, improved well-being, and reduction in indoor pollution). However, there is little empirical evidence on leakage, durability, and positive social and environmental co-benefits of offset projects. Leakage refers to simply displacing emissions to somewhere else. Durability refers to emissions reductions not being subject to near-term reversal. Existing studies mostly look at short-term intervention periods (from 2 to 11 years in the Probst et al. study), and almost no studies consider post-intervention effects (e.g. once payments have stopped). There is a false assumption that burning fossil carbon (which is safely stored in the ground before extraction) is equivalent to carbon temporarily stored in biological systems (Power Shift Africa, 2023).

Another study (Trencher et al., 2024) of 20 companies that procured offsets from the Voluntary Carbon Mechanism (VCM)'s largest registries (VCS, CDM, and GS) and retired them over the period 2020 to 2023 found that 87% of the projects were of poor quality and carried a high risk of not providing real and additional emissions reductions. Offset 'quality' is defined by additionality, permanence, avoiding over-crediting and double-counting (e.g. buyers and sellers claiming the same credits against emissions reduction targets), and protecting against negative effects on society and the natural environment.

The main focus of credits was on cheaper avoidance credits (e.g. REDD+ forestry conservation) and renewable energy projects, which claim to avoid GHG emissions compared with the counterfactual where the activity was not implemented. However, these are prone to over-crediting, overestimating emissions reductions, and exaggerating additionality. The alternative is removal

projects, but these also face quality issues (e.g. afforestation and soil enhancement projects have been found to overestimate carbon stock and lack additionality). Such nature-based solutions cannot store carbon permanently on the long-term scales required for effective climate mitigation.

These and numerous other studies have caused investors to lose confidence in voluntary carbon markets. There are efforts to revive carbon offsets based on Article 6 of the Paris Agreement, which proposes credits backed by the United Nations. However, these are subject to the same fundamental criticism – that they delay emissions cuts by polluters who purchase offsets elsewhere – and to the ongoing problems of leakage, additionality, permanence, and measurement. Article 6 also has no requirement for free, prior, informed consent of indigenous people and local communities, whose lands and livelihoods will be most affected by offset projects (Lang, 2024). Numerous reports reveal violent dispossession and human rights abuses as conservation projects seek to clear areas for offset projects (see Oakland Institute, 2024, on the Democratic Republic of Congo; Brook, 2024, on Cambodia; Peres and Merlino, 2024, on Brazil; and Silnorf and Swiss Church Aid, 2024, on Sierra Leone for some recent examples).

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Biodiversity offsets

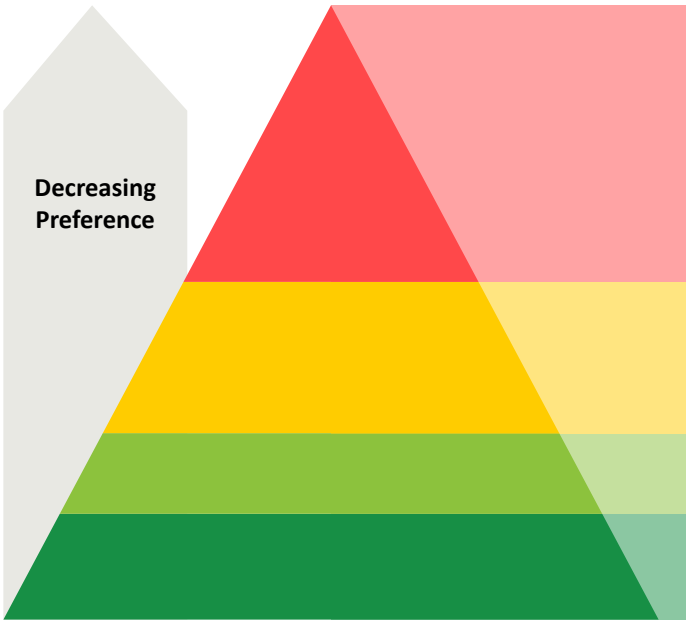
Biodiversity offsets follow the same model as carbon offsets and credits in that they permit continued biodiversity damage from development where offsets can be secured. However, the problems are compounded because of the deep complexity of ecosystems and biodiversity compared with the relatively simple quantification and measurement of GHG emissions (which themselves are not that simple, as indicated above).

According to the DEA (2017:54), "the goal of biodiversity offsets is to achieve no net loss and preferably a net gain of biodiversity on the ground to species composition, habitat structure, ecosystem function and people's use and cultural values associated with biodiversity". The aim is equivalence (like-for-like offsetting), while long-term biodiversity protection must be enforceable and auditable. Clarity is still required on implementation and administration (DEA, 2017:55), with a proposed 30-year responsibility (DEA, 2017:56).

The biodiversity mitigation hierarchy (Box 1) indicates that avoiding biodiversity damage and loss is the priority intervention, while offsets are the intervention of last resort. Although more recent than carbon offsets, biodiversity offsets confront similar or even more challenging requirements to reduce biodiversity loss and restore biodiversity effectively.

As with carbon, biodiversity offsets and credits are required to value nature in monetary terms, and ultimately, they further commodify nature to benefit financial elites (Spash, 2015). Offsets and payment for ecosystem services are a concern, as these instruments facilitate the financialisation of nature, and there is limited evidence to show that these work to reduce biodiversity loss. Instead, they allow for business as usual amongst those responsible for biodiversity loss and create markets for the trade in financialised credits on top of material reality. Success in generating income from offsets and credits offers the illusion that the problem is being resolved.

Box 1: Mitigation hierarchy



Offset – Compensate for any residual negative impacts following the full implementation of the first three options. 'Restoration offsets' are to rehabilitate or restore degraded land, and 'averted loss offsets' are to reduce or stop biodiversity loss where this is predicted. This is complex and expensive (and with questionable results in reality). Offsets are the last resort after the others have been adequately and explicitly considered and implemented.

Restore – Restore or improve degraded ecosystems following exposure that cannot be entirely avoided or minimised, with restoration to the condition before the intervention and rehabilitation to restore basic ecological functions.

Minimise – Reduce the duration, intensity and/or extent of impacts where these cannot be entirely avoided.

Avoid – Avoid impacts from the outset. This is often the easiest, cheapest, and most effective, but requires biodiversity to be considered in the early stages of project development.

The approach presents a logic in at least three dimensions (Bryan and Rafferty, 2010:198):

1. Segmentation: Decomposing the social and economic world into increasingly precisely defined constituent 'elements' or 'attributes'.
2. Quantification: Configuring each element as a measurable entity with attributes of risk, such that each element is, in principle, comparable with other elements. This turns a contingency of the social and economic world into a recognisable unit of measure, which can be made commensurable with other different elements of attributes.
3. Commodification: Trading each attribute of risk through markets.

This “new environmental pragmatism” (Spash, 2009) is problematic for several reasons. First, it reduces deep complexity in ecosystems to a small set of ‘proxy’ indicators and focuses on elements that are found in common across ecosystems. Biodiversity is a complex, interconnected, and non-fungible quality of particular ecosystems. Even at the simplest level, assessment requires multiple baselines and high levels of monitoring (Dempsey et al., 2021:4). As it is, significant knowledge gaps remain even on straightforward measurement of biodiversity, the full range of benefits of biodiversity, and the multiple and interconnecting impacts of biodiversity loss on people and ecosystems (Isbell et al., 2023).

Questions immediately arise about who selects the constituent elements for valuation. In whose interests is risk defined (e.g. risk to corporate investment and profitability or risk to survival in local communities)? Information on which risk assessments are predicated raises some major concerns:

1. The ‘right’ data has not, and may not, materialise.
2. Current data and assessment tools are mainly proprietary and thus unavailable for transparent evaluation.
3. The emphasis on producing new data in service of financial markets is out of step with important shifts in conservation practice towards ecosystem and human rights approaches (Irvine-Broque and Dempsey, 2023:6).

Ultimately, this approach allows financiers and asset managers to determine what constitutes the impact of biodiversity. This inevitably results in excessive simplification and exclusion of critical factors and relationships to secure commensurability between elements of ecosystems. There are assumptions that all ecosystem functions are known, knowable, and stable, and all potential alternative land uses are known. However, in practice, “valuation exercises can at best give single point estimates on a function” (Spash, 2015:543). Costs are related only to market prices, without considering non-market and secondary aspects (e.g. the impact of local food production on health). In these models, the economy is divorced from the environment because all land could be used for something other than ecosystem services or species habitat.

This ‘opportunity cost’ argument is at the core of biodiversity offsets, based on the belief that any form of development on the land has more value than ‘untransformed’ natural ecosystem services. The implicit assumption is that humanity does not require anything from nature to survive. Unique and special site qualities must be redefined in common units, allowing for substitution and commensurability across sites. This removes the empirical evidence for the existence of multiple values and motivations for biodiversity conservation and does not protect rights and intrinsic values.

The market-based approach promotes what people are prepared to pay for. Other aspects that people are not willing to pay for are considered a wasted opportunity, hence the conclusion that there is an “overprovision of land for conservation” (since no one is prepared to pay for it). As land values rise with population pressure, urbanisation, and the expansion of agricultural production, the opportunity cost of leaving the land for species habitat and ecosystem services increases. Hence, the logic is to reallocate this land for higher-value activities. Conservation as a value must compete with all other products offered in the consumer world. Biodiversity offsetting thus forms a process of commodification and reduction of habitats to an exchange value (Spash, 2015:543–45). Aside from the theoretical critique of the approach, evidence suggests that offsets, credits, and payment for ecosystem services have not served to improve the situation regarding climate or biodiversity (Marshall et al., 2020) but essentially “use economic logic to legitimise, rather than prevent, ongoing habitat destruction” (Spash, 2015:541).

Low rates of return, high risk, long timelines, and high transaction costs hinder investment and scalability. These financial products do not address the drivers of biodiversity loss indicated by IPBES. There is ultimately little evidence that return-generating biodiversity conservation will generate large amounts of new funding for biodiversity (Dempsey et al., 2021:7–8).

Offsets, as currently formulated, reproduce business as usual. At best, there is no restoration but a ‘like-for-like’ swap under the ‘net zero’ concept. In most situations, even this is not achieved because of the simplification required to generate measurable indicators. At worst, offsets are complete greenwashing, with the commodification of ecosystem services and short-term benefits to financial institutions and elites, while the actual environment continues to decay. The pursuit of sustainability through economic self-interest is upheld over distributive justice in response to structural inequalities (Irvine-Broque and Dempsey, 2023:3). As such, ACB cautions against deploying offsets and credits as a key pillar of biodiversity financing.

Public sector funding

Market instruments are most prominent in the BFP, but the government must always play a regulatory and enforcement role. The BFP indicates that the primary funding sources are private local, followed by public local, and then international private and public funds. Yet government authorities lead most solutions (DEA, 2017:29).

The BFP makes a case for the importance of biodiversity for sustainable social and economic development, including tourism, water supply, food security, and climate change resilience. Habitat loss and ecosystem degradation are the primary pressures on biodiversity in South Africa. Key drivers are cultivation and overgrazing, invasive alien species encroachment, coastal development, certain destructive fishing activities, and unsustainable mining and urban development. Eighteen per cent of the land surface has an outright loss of natural habitat, with economic costs on water, food, and livelihoods (DEA, 2017:1).

The BFP's investment case (DEA, 2017:6–8) refers to the SDGs and the multiple ecosystem services such as the use of natural products (especially by the rural poor); natural pest control and pollination services; healthy and functioning rangelands; and protection of settlements, agricultural lands, and infrastructure. Wetlands and catchments are integral to water flow regulation (flood control), soil retention, removal of toxins, and removal of IAPs to reduce water losses. Jobs can be created through ecosystem management and protection, including the DFFE NRM programmes (e.g. Working for Water) and ecotourism. According to the DFFE, South Africa's biodiversity offers ecological services estimated at ZAR 275 billion to ZAR 333 billion to the country's economy. For each job created to protect biodiversity, five jobs depend directly on using biodiversity (Naicker-Manick, 2024:2–3). It is important to acknowledge that efforts at quantification, including through the concept of "natural capital accounting" (DEA, 2017:37), face similar challenges and threats as discussed with biodiversity and ecosystem services above (Harte, 1995; Maechler and Boisvert, 2023). Therefore, a deeper systemic transformation of the relationship between people and nature is required so that nature does not need to be disintegrated and reformulated as a set of simplified and discreet economic values.

The concept of "ecological infrastructure" ("the nature-based equivalent of built or hard infrastructure") (SANBI, n.d.) is deployed to support the justification for investment in the environment. Grants and funds for ecological infrastructure investment exist but are not managed by DFFE. These include provincial and local conditional grants, the Jobs Fund, EPWP, and Land Care as some examples. It could be possible to tap into ('hard') infrastructure grants through the introduction of ecological infrastructure as part of larger infrastructure projects (e.g. water services, regional bulk water infrastructure, municipal infrastructure grant) (DEA, 2017:71).

A key role remains for the public sector in providing core and catalytic funding that can unlock and protect the valuable contribution of biodiversity linked to the biodiversity economy and comprehensive support for active participation in the biodiversity economy by marginalised communities. Investment in management, monitoring, and enforcement capacity is likely the best use of public sector resources if penalties for poor practice and non-compliance are sufficiently severe. This can result in increased revenues for conservation authorities and local communities to benefit from biodiversity conservation and PAs.

The BFP indicates that government spending on biodiversity was around ZAR 11.5 billion in 2016 (90% of total calculated expenditure), compared with ZAR 732 million by the private sector and ZAR 515 million by non-government organisations. Figure 1 shows budget trends for key environmental programmes in DFFE after considering inflation. It indicates an 84% real increase in the budget for biodiversity and conservation over the decade and a 48% increase in the parks budget over the same period. However, the biodiversity and conservation budget peaked in 2023 and is set to decline, with the 2026 medium-term allocation showing a 22% drop from 2023. The budget for crucial environmental programmes decreased by 27% from 2017 to 2026. This latter was sharply reduced during the Covid lockdown period and did not return to earlier levels.

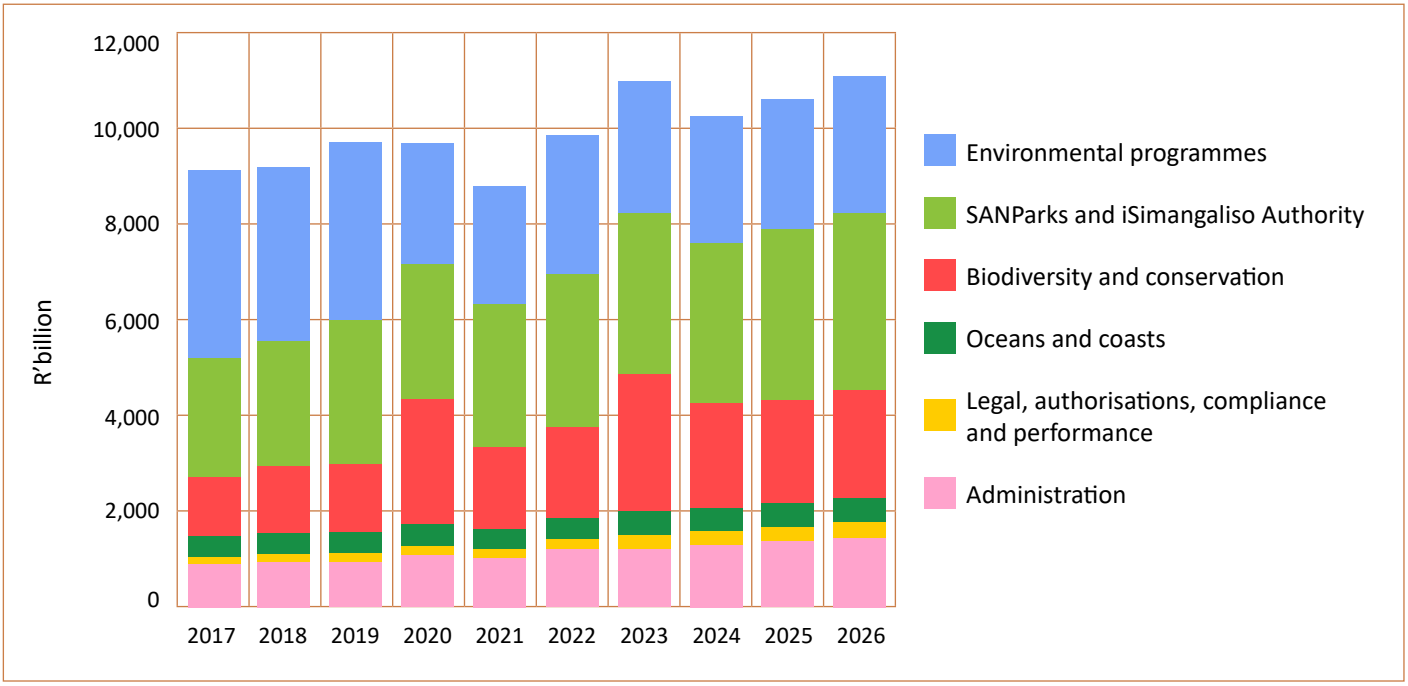


Figure 1: DFFE environmental budgets by programme (after inflation), 2017–2026
Source: National Treasury budget votes
Note: Estimated inflation in 2025 and 2026 is at 5.5%

The provincial Medium Term Expenditure Frameworks for 2024–26 indicate budgets for the total environment and biodiversity are set to rise at 3.9% per year, a rate lower than inflation and hence a decline in real terms. There is thus a big concern about underinvestment and austerity budgets. Current funds are insufficient to cover the costs of implementing the NBSAP, and other funding for activities beyond the NBSAP is also needed. The NBSAP requires expenditure increases from ZAR 2 billion to ZAR 12 billion to meet restoration targets (DEA, 2017:13) and ZAR 63 billion over 10 years for effective implementation (DEA, 2017:2). This seems to be a valuable investment to leverage and support the direct value of biodiversity to the economy and job creation, even aside from the ecological benefits of biodiversity restoration and protection.

Given the imbalance of control over wealth and financial resources in the country between the private and the public sector, however, there is unlikely to be much additional government spending. Hence, the department must turn to other funding sources, including the private sector. This could be done either through trying to create profitable means of securing biodiversity or through a programme of massive resource redistribution in the country. Core public sector funding will remain essential for management, monitoring, enforcement, infrastructure, and support, which, if done properly, can leverage significant additional resources. The public sector must be able to sustain core support for PAs, biodiversity stewardship programmes, and contributions to IAP clearing, amongst other activities. As discussed, it is possible to tap into funds and grants in other sectors for ecological infrastructure and reallocate harmful subsidies, including agricultural input subsidies. Even if some of these don't generate direct income for the department, they will contribute to relieving the pressure on the natural resource base, which will mean fewer or less intensive restorative actions will be needed.

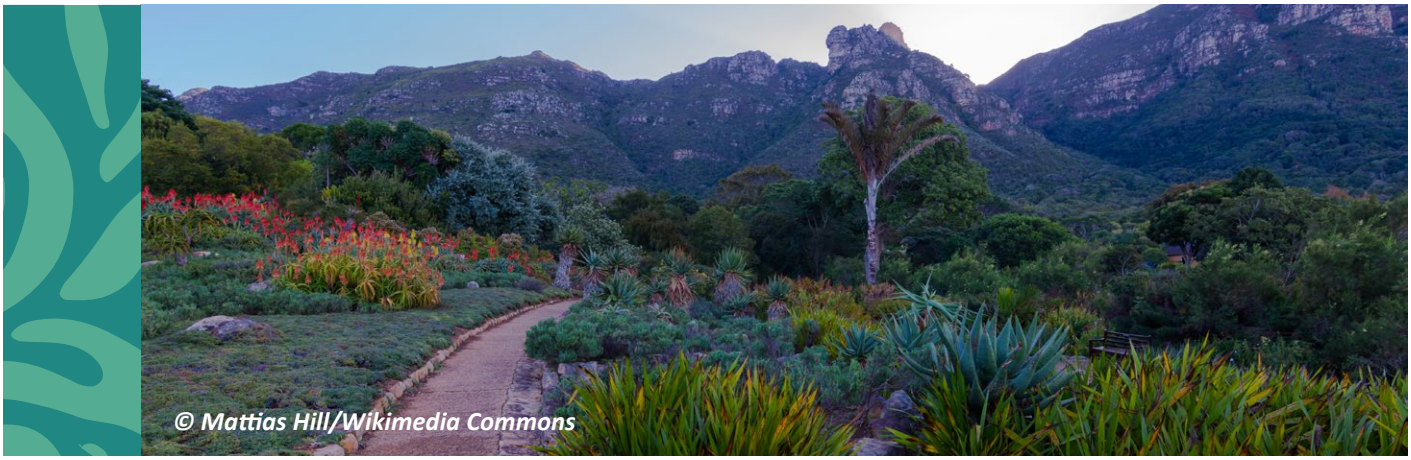
If the state does not have enough resources to do what is critical for ecosystem integrity and the survival and well-being of the population within its territorial jurisdiction, then there is a need to tap into the deep pools of privately owned resources – amassed on the back of colonial and apartheid dispossession, oppression, and exploitation. The appropriation and redistribution of this wealth for a more just and equitable future for all is morally justified. This requires an urgent redistribution of material resources through significantly higher progressive taxation, wealth caps, expropriation, and redistribution of resources above the cap and, ultimately, social ownership and democratisation of financial institutions and key industries for the common good. Without this radical action, expecting to resolve biodiversity and broader environmental crises or redress social injustice is not feasible. This crucial political question remains unanswered in the post-apartheid era.

Market-based funding

A big part of the BFP is trying to think of creative ways of getting the private sector to sponsor biodiversity restoration and protection through profit-making schemes. This is a fool's errand. As ACB, we express serious concerns about relying on market mechanisms to allocate resources for biodiversity conservation and protection, which is a public good. It is clear enough that these resources are severely undervalued in the market, and this undervaluation is precisely what has underpinned capitalist accumulation historically (Moore, 2015). This model is now faltering, and ecocidal extractivism is becoming more aggressive as these limits become apparent. The sections below summarise the BFP's proposals for market-based initiatives to finance biodiversity, along with commentary.

Protected areas own revenue

PAs' revenue is generated from gate fees, tourism concessions, conferencing facilities, and wildlife sales. SANParks charges stratified fees (foreign visitors pay more than local and Southern African Development Community citizens) but not all conservation authorities are doing this yet. However, fee options are case-specific, depending on factors such as the location of cities and transport hubs, natural assets, and existing tourism infrastructure. These generate revenues for conservation authorities and local communities to benefit from PAs (DEA, 2017:42). We note that imposing fees for the use of parks can exclude some who cannot afford to pay. This is inequitable and must be considered in structuring fees (e.g., waiving fees for previously disadvantaged individuals or some other mechanism) to ensure that citizens are not prevented from enjoying these common resources. Increased own revenue should not result in a concomitant decrease in government funding allocations (DEA, 2017:43). Management capacity and good governance are required for success in increasing own revenues.



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Revolving land trust

The proposal for a revolving land trust is based on purchasing degraded land, rehabilitating it, declaring it as a PA, confirming subsidies, etc., possibly generating a management plan, and selling the land. The idea is that such a revolving trust could act as a repository of land parcels that can be purchased by developers who are required to secure biodiversity offsets (DEA, 2017:62). Any profits from land sales can then be used to cover operating costs or reinvested in further land purchases (DEA, 2017:63–64). The main problem here is the underlying endorsement and perpetuation of private land ownership and the consequent alienation of local communities from the land. Land as a natural resource is a common heritage and should not be owned by anyone. Either it can be held in trust by the state on behalf of the people, or it can be kept in stewardship by individuals or groups. However, in the latter case, there should be responsibility for maintaining its ecological integrity and for some sharing of the proceeds for the public benefit. This points to land taxes and the need to increase taxes commensurate with the value generated from the private use of that collective resource.

NRM value-added industries/biodiversity economy

Ecosystem restoration and NRM programmes generate job creation and skills development, ecosystem restoration, and the recovery and improvement of ecosystem services. DFFE NRM programmes include the 'Working for/on' Water, Wetlands, Ecosystems, Land (especially the re-introduction of indigenous species), Coasts, and Fire. ACB supports calls for the integration of DFFE's NRM programmes and the EPWP (DFFE, 2024:18). Other public works programmes, such as the Community Works Programme, the EcoChamps model, and the Presidential Social Employment Fund, could also be integrated.

IAP biomass value addition can generate revenues for NRM and local economic development and reduce biomass disposal costs borne by the state. Biomass value addition can include firewood, biochar, timber, furniture, packing materials, compost, feed pellets, and building materials, producing jobs and income diversification, reducing programme costs, and minimising the potential for fire damage through less dead biomass remaining on the land (DEA, 2017:79). However, business viability remains in question. Small-scale, mobile solutions may be best, but institutional, operational, and market challenges must be addressed (DEA, 2017:80–82). Implementation challenges include corruption and lack of accountability in management systems, top-down control of participant selection, unreliable payment and timeframes, payment below the minimum wage, rigid and demanding systems for SMMEs, limited resource allocations for effective supervision and management, and restricted opportunities for value addition as part of the programmes. Local actors are pressured into unsustainable market-based approaches to NRM and conservation (Greenberg et al., 2022). Given these activities' ecosystems and publicly beneficial functions, ongoing state subsidies should be provided to support them.

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NRM value-added industries are directly related to the draft National Biodiversity Economy Strategy (NBES) (DFFE, 2024). ACB submitted comments on the NBES; a synopsis of our main points is below.

The first pillar of the NBES is ***ecotourism***. As indicated above, tourism is now a larger economic sector in South Africa than mining and has the potential for further growth. The NBES proposes the establishment of "mega living conservation landscapes" with a "mosaic of conservation and production ecosystems under different legal and management arrangements" (DFFE, 2024:13). This brings diverse ecosystems into one frame and encompasses state, community, and private land. The goal includes infrastructure development and support for community-based enterprises "with high potential for community involvement" situated on communal land adjacent to PAs and private reserves. For this goal, the ACB supports the proposal to bring previously disadvantaged individuals (PDIs) and communities more directly into ecotourism activities. The ACB believes these activities can contribute to economic diversification while securing and protecting biodiversity. While, in principle, the idea of integrating multiple landowning arrangements into 'living conservation landscapes' is sound, the ACB cautions against the possibility of land grabbing of community land within these mega landscapes. Mechanisms should be put in place to ensure this does not happen.

The second pillar of the NBES is ***hunting***. The strategy promotes the consumptive use of game, including the promotion of trophy hunting, recreational hunting, and the game meat industry. Trophy hunting is defined as killing wild animals for their body parts, such as head and hide, for display but not primarily for food or sustenance (HSI, 2016). The draft NBES includes hunting for 'traditional use,' and the ACB supports appropriately managed hunting by local communities for food and sustenance to integrate conservation and livelihoods. However, the ACB has serious ethical concerns about promoting trophy and recreational hunting as a sustainable solution to biodiversity loss.

African lions and leopards are categorised as vulnerable species on the International Union for the Conservation of Nature's Red List,[1] and the African elephant is categorised as endangered. The white rhino is near threatened, while the black rhino is critically endangered. The promotion of the killing of living things for recreation to make money, even if this money is purportedly to support ongoing conservation, is highly questionable. It flies in the face of the White Paper on Biodiversity Conservation and Sustainable Use's emphasis on a fundamental re-examination of the relationships between people and nature and the rights of nature. Adding the word 'sustainable' to the front of hunting does not eliminate the moral duty of care, especially in the context of dwindling species. While the ACB acknowledges that conservation, protection, and restoration of biodiversity is critically underfunded, this proposed solution indicates just how far down the path of commodification of nature we have come, and how alienated humanity is from the natural systems from which we emerged and of which we are part.

The argument favouring hunting is that it generates income and allows the management of animal populations trapped in comparatively small areas without their natural predators. Part of the problem is that game reserves and PAs are often fragmented pieces of land that do not allow animals' natural and free movement across wider territories. 'Prey populations' grow beyond the land's carrying capacity because no natural predators are left. An alternative vision is needed, based on reimagining the spatial relationships between 'transformed' and natural environments, which in turn brings into question the underlying economic imperatives of extraction and profit that have shaped present spatial arrangements. What may be required is precisely to "remove all fences and put the predators back".[2] This approach is more aligned with the White Paper's orientation away from the "fortress conservation" model and towards ecological corridors that allow the natural movement of species even within the mosaic of land uses at landscape level.

The third pillar of the NBES is ***fishing***. The strategy promotes the use for consumption of wild and produced marine and freshwater resources. The ACB supports the draft NBES' inclusion of small-scale fishers in this goal and its acknowledgment of the ongoing challenges facing these fishers, particularly regarding access and rights allocations. The draft identifies overexploitation and illegal harvesting as a concern, which should be taken seriously, especially about large commercial ventures that are primarily responsible for depleting fish stocks under South Africa's jurisdiction. We do have concerns about commercialisation of fishing as the only focus in the draft strategy. Large commercial ventures are primarily responsible for depleting fish stocks under South Africa's jurisdiction. The goal requires an explicit acknowledgment of the enduring role of small-scale fishing in sustaining local livelihoods and food security and should include concrete ways to strengthen informal and local supply chains for local consumption rather than only formalisation and scaling up.

The section in the NBES on inclusive ***bioprospecting/biotrade*** includes:

- institutional mechanisms to support the discovery of potentially marketable products and the inclusion of communities and PDIs in the biotrade sector in sustainable production and harvesting of key species (e.g. aloe ferox, buchu, and honeybush);
- mass cultivation and nurseries of indigenous plants for commercial use in large land restoration /rehabilitation and carbon sequestration programmes;
- cultivation of indigenous medicinal plants for use in the traditional medicine sector in consultation with traditional harvesters and healers;
- promotion of in-situ management of crop wild relatives and wild food plants in line with the National Plant Genetic Resources Plan; and
- supporting and building the informal edible insect sector and apiculture.

The ACB strongly supports promoting these activities as excellent examples of economic diversification and synergy in alignment with agroecological principles and prioritising local community needs above large, formal commercial market imperatives. The proposed action on PDI and community cultivation of indigenous plants for land restoration, rehabilitation, and carbon sequestration is a strong example of synergistic relationships. This action point could be strengthened through explicit reference to agricultural biodiversity based on indigenous and local plants and varieties. This can also strengthen the link between agricultural production, wider biodiversity conservation, and sustainable use. ACB notes that while opening the biodiversity economy to PDIs and communities is a step forward, it remains within the context of the commodification of nature and a profit-driven economic model.

1 https://www.iucnredlist.org/
2 Jacques van der Westhuizen, hunting concession and game reserve manager in Limpopo, quoted in Uys, 2016.

Biodiversity stewardship programmes

Currently, most land in South Africa is privately owned, and it makes sense to make efforts to bring more of that land into the orbit of conservation and sustainable use. In this context, this is best achieved through partnerships with landowners. According to the BFP, the main obstacles to private investment in conservation properties in the public good are lack of risk appetite, burdens and liabilities in holding land (taxes, IAPs, risk of wildfire), and unpredictable government processes and benefits (DEA, 2017:61).

Biodiversity stewardship programmes can support other work programmes within the biodiversity sector (e.g. NRM programmes), form the basis for other finance solutions, and enable job creation and skills development in agriculturally marginal areas (DEA, 2017:64). The stewardship approach is particularly effective in multi-use landscapes where biodiversity priority areas exist in a matrix with other land uses. Stewardship agreements can be tailored to support sustainable production within the area and can protect fragmented ecosystems that may not justify the creation of large state-owned PAs (DEA, 2017:65). Nevertheless, biodiversity stewardship programmes require adequate financing and ongoing support from the state (DEA, 2017:69). While such programmes can provide substantial cost savings for the state, they are currently under-resourced. This finance solution requires other finance solutions to function effectively.

Biodiversity stewardship (on or off PAs) involves securing land in systematically identified biodiversity priority areas led by conservation authorities. The DFFE (2022a) currently lists 120 threatened ecosystems. Agreements – binding contracts for a fixed period – are made with landowners on sustainable land use practices, including protection, management, and restoration. Such practices indicate diversification of land-based activities to create sustainable livelihoods while protecting biodiversity. This can be realised at a lower cost than acquiring state land for PAs. The BFP proposes a hierarchy of agreements, with adherence to conditions over minimum periods (typically 5–10 years, but this could be longer) and possible land use restrictions (DEA, 2017:11). Some intermediate agreements are less strict than formal PAs.

A plain agreement, or Biodiversity Management Agreement, requires a management plan (DEA, 2017:12). Some state investment is needed to get biodiversity stewardship agreements off the ground, land reform sites require additional support, and ongoing incentives are required (DEA, 2017:13). The National Protected Areas Expansion Strategy has three main mechanisms: land acquisition, contract agreements with private landowners, and the declaration of public or state land as a PA (DEA, 2017:11).

Global funds

The final source of funds for biodiversity restoration and protection identified in the BFP pertains to global climate and biodiversity funds that have emerged from global negotiations over the years. As indicated above, there is a strong connection between climate change and biodiversity loss. Thus, biodiversity has a legitimate call on at least a share of climate funds to support actions that respond simultaneously to climate change mitigation and adaptation and to biodiversity restoration and protection. Several funds actively seek projects with multiple benefits beyond adaptation and mitigation, including biodiversity. Examples are the Green Climate Fund, the Adaptation Fund, the Clean Technology Fund, and country-based funds such as the United Kingdom and Norway Climate Funds (DEA, 2017:102). South Africa is currently the fifth largest recipient of climate funds globally, behind Brazil, Sub-Saharan Africa regional, Indonesia, and India.[3] The greatest opportunity lies in project design that emphasises the co-benefits of biodiversity to climate change mitigation, adaptation, or cross-cutting approaches (DEA, 2017:102).

However, these funds are not delivering the quantity of resources promised, and this route may not be reliable in securing sufficient financing for biodiversity work. Further, climate financing mostly takes the form of debt/loans. Globally, climate finance in the form of grants constituted just 5.6% of total financing, while debt constituted 59.6% of total climate financing (with low-cost project debt only 10% of this) (Naran et al., 2024:1). For Africa, grants constituted 32% of climate financing, while debt constituted 51.3% of the total (of which low-cost project debt constituted 50.9%) (Meattle et al., 2024:1). This emphasis on debt to pay for efforts to respond to the climate crisis is highly problematic, given that countries in Africa are being made to pay for a crisis the continent has had a minimal hand in causing (Evans, 2021; Statista, 2023; Abdela et al., 2024), and whose population is bearing the brunt of the negative impacts. There is an ethical call on polluting countries, first to acknowledge their role in producing this crisis and the unequal benefits that have accrued to them and their populations, and second to make meaningful contributions to resolving the crisis. This inequity extends to the issue of African debt peonage and continuing extractivism from the continent, which ACB discussed in a recent paper on harmful subsidies and debt (ACB, 2024). ACB recognises the need for sustainable means of financing the necessary measures to respond effectively to halting and reversing environmental degradation and ensure that environmental conservation and ecosystem services can be performed adequately in the future. However, alternatives must be found to financialising nature to achieve these ends.

Countries and corporations that have created most of the loss and damage have an ethical responsibility to assist those who did not play a major role in causing environmental instability to adapt to the new context. In the long term, responsible countries must also respond effectively to the need to reduce GHG emissions and restore lost biodiversity. To embrace compensation for the negative social and economic effects of historical and ongoing climate change and biodiversity loss goes beyond paying to conserve and restore biodiversity and eliminating activities that may cause further harm (Roe et al., 2023). There are already strong internationally negotiated and agreed precedents in the 'polluter pays' principle and justice and equity-based approaches. Climate negotiations have highlighted the importance of 'loss and damage' funding based on these principles and approaches. Extending the concept of reparations for loss and damage to biodiversity has some legitimacy. Two key drivers of biodiversity loss are habitat loss and degradation in terrestrial ecosystems and overexploitation in aquatic ecosystems. These are largely fuelled by rich countries' consumption, with many of the negative effects being felt in Africa. Trade-offs are not always freely chosen. African and other countries of the South are often compelled into agreements that allow more powerful Northern countries to exploit and overexploit the continent's natural resources. Since climate change is a key driver of biodiversity loss, some of the damages associated with the latter could potentially be addressed through the climate change loss and damage fund (Roe et al., 2023:1337).

While South Africa may try to attract some of this funding, it should be viewed as catalytic funding that can kick start or deepen activities. Ultimately, the country needs to look internally for funds. In the current context of rampant ecocidal elites, those who are most responsible for the damage are unlikely to heed the ethical call unless strong pressure is applied to them. Thus, it is unlikely that sufficient funds will come from international sources. To challenge these unsustainable global power imbalances, South Africa must enter into alliances with other countries, especially in the Global South.

3 https://climatefundsupdate.org/data-dashboard/#1541245745457-d3cda887-f010

Conclusions and recommendations

The human species faces a multi-faceted environmental, social, and economic crisis. Fundamentally, this crisis is caused by capitalist dynamics of accumulation and extraction and the associated use of the environment as a free or cheap resource and service provider. Centuries of this approach to nature have caught up with the human species. Recognition of the need for rapid and systemic change is widespread and stated explicitly by numerous scientists and United Nations agencies amongst multitudes of indigenous and other voices of those most directly affected.

Unfortunately, biodiversity restoration and conservation are caught up in this broader imperative, with efforts to convert the necessary actions into sites for further capitalist accumulation. This must be resisted, and the only way to do so is to deliberately and systematically rebase economic activity on the primacy of use values over market exchange values.

While the BFP attempts to identify ways to secure adequate resources to carry out essential biodiversity work, it falls into the trap of 'environmental pragmatism' and does not offer a systemic way out of the crises facing us.

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Recommendations

Practical steps to secure resources must acknowledge the current context of capitalist dominance and private ownership of land and productive property. At the same time, they must be designed to open lines of escape from this straitjacket being imposed on the possibilities for biodiversity restoration and conservation. Care should be taken to design interventions that do not reinforce or entrench these limits.

Incentives and subsidies

- There is huge potential in reducing harmful subsidies to fossil fuels, mining, and conventional agriculture and switching a share of these to biodiversity-friendly practices in energy and agriculture. This is already explicitly included in global agreements to which the South African government is a party, including the SDGs and the GBF.
- DFFE should include GBF Target 18 on harmful subsidies in South Africa's revised NBSAP.
- Care should be taken to ensure subsidy reform strengthens access to energy and food for marginalised and disadvantaged individuals and communities while eliminating subsidies to large-scale commercial operations in these industries.

If done properly, subsidy reforms could more than cover the required costs of biodiversity restoration and conservation and other environmental interventions. Reducing harmful economic practices and supporting environmentally and socially beneficial ones would directly benefit environmental and human health.

Taxes and penalties

Taxes and penalties are a means of redistributing resources from their concentration in private hands towards democratically controlled public goods and services. This is part of apartheid redress but has not been tackled to date.

- While the BFP's emphasis on water tariff reform as a key source of funds is appropriate, direct more effort toward constructing democratic, effective, and accountable catchment management and water user institutions.
- Increase maximum fines for contravention of biodiversity laws and regulations, making them a real disincentive. Link fines to a percentage of turnover or profit, as the Competition Commission is already doing.
- Adopt a 'social cost of carbon' approach by internalising the currently externalised environmental, social, and economic future costs of GHG emissions and phase out or significantly limit exemptions to the carbon tax on a rapid timeframe.
- Adopt the precautionary principle regarding carbon and biodiversity offsets and place a moratorium on their use to allow for a review of the extensive literature on their impacts, globally and in South Africa and assessment of their actual reduction in GHG emissions and on stemming biodiversity loss and restoring ecosystems integrity.

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Public sector financing

- Focus on effective management, monitoring, and enforcement of laws and regulations, coupled with significantly increased taxes and penalties for contraventions. In combination, these investments can generate all the necessary resources required to support the implementation of an expansive NBSAP (i.e. one that adopts all the GBF targets relevant to the South African context, and not only a selected few to fit within a limited budget) and other related environmental interventions.
- Consolidate integration with other public sector resources that relate to biodiversity, including the EPWP and investments in ecological infrastructure and sustainable water resource management.
- Implement interventions for the urgent redistribution of material resources through significantly higher taxes, wealth caps, expropriation of resources above the cap, and, ultimately, social ownership and democratisation of financial institutions and key industries and their restructuring and repurposing to serve the common good.

Global finance

Securing adequate resources from polluters and major beneficiaries of environmentally damaging economic activities requires strong global coalitions to assert the ethical call for fully resourced loss and damage funds. Resist approaches that require countries to take on debt to pay for the necessary responses to climate change and biodiversity loss, and link this to a call for reparations for Africa.

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