



RECOMMENDATIONS

- Adopt a holistic and integrated ecosystem-based services approach to inform planning and management priorities, and integrate these services into mainstream economic planning and development policy.
- Quantify the economic value of ecosystems and their services, and use this to entice investment into sustainable financing for conservation.
- Utilise rigorous scientific data and spatial mapping to determine conservation priorities and formulate policies that regulate development interventions, promote layered and developed governance systems that perform national, multi-sectoral and co-ordinating functions, and incorporate local co-management systems with communities and resource users.
- Strengthen legal and regulatory frameworks to protect vulnerable ecosystems, especially EIAs in new extractive sectors.

Emerging Insights into Governance and Sustainable Management of Africa's Natural Ecosystems

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EXECUTIVE SUMMARY

Developing countries need to grow their economies to meet the needs of their people, while ensuring that the productivity and viability of the underlying ecosystems are maintained at healthy levels. Resilient ecosystems are vital to achieve global sustainable development through the direct contributions they make to livelihoods. Although progress has been made to better value and manage these 'global commons', SAIIA research shows that human pressures and economic activities compromise their resilience and erode their capacity to deliver vital ecosystem services. This research analyses mechanisms to help decision-makers understand the extent to which ecosystem services contribute to the well-being of their constituents and their countries' envisaged economic development. It also considers tools to minimise trade-offs between environmental, economic and social benefits; and offers insights into the governance and sustainable management of Africa's natural resources.

INTRODUCTION

In the past decade the international community has become aware of the non-market values associated with nature's 'services'. Healthy and resilient ecosystems, such as tropical and dryland forests, wetlands, grasslands and mangrove swamps and coral reefs, all support other natural habitats and ecosystems. Ecosystems deliver economic, ecological and social co-benefits that support poverty alleviation and development objectives. However, despite undisputed scientific evidence and an overwhelming consensus on their importance, ecosystems globally are being degraded, lost or poorly managed.²

The causes of Africa's ecosystem loss and habitat destruction include population growth; economic development; large-scale commercial agriculture and aquaculture expansion; urbanisation; the demand for energy; and new infrastructure projects. In addition, climate change is having an impact on the growth and productivity of ecosystems; directly through changes in carbon dioxide

and climate, and indirectly through the altered frequency and severity of disturbances such as fires and droughts.

Many African countries are acquiring new wealth from recently discovered oil, coal and gas deposits, leading to a spike in on- and offshore exploration and mining in sensitive ecological areas.³ In Nigeria, Guinea-Bissau and Mozambique, for example, wetlands and estuaries coincide with fossil fuel deposits and related infrastructure developments. In northern Kenya, port developments in Lamu are set to take place in the West Indian Ocean Rim's most important mangrove area and fisheries breeding ground. In KwaZulu-Natal and the Eastern Cape of South Africa, heavy mineral sands are located in important dune forest ecosystems, and gas is being prospected for in the water-scarce and ecologically unique Karoo. In east Africa, oil discoveries have been made in the tropical Congo Basin rainforest and the Virunga National Park – a world heritage site and a Ramsar wetland.

Important lessons have emerged from recent SAIIA research on how these human pressures compromise Africa's natural ecosystems. In the wake of Africa's extractives boom the policy community must urgently consider tools to minimise ecological trade-offs and to reconcile economic development and environmental sustainability. Innovative mechanisms have been developed to improve baselines for global ecosystem management and to enhance scientific knowledge to strengthen legal and policy frameworks, institutions and co-operative mechanisms. Ecological assessments support decisions about the use of ecosystems and their services, acknowledging the multiplicity of these ecosystem values and making decisions that are consistent with their conservation, restoration and sustainable use. Other measures are being developed to frame ecosystems in a broader, integrated and multi-use landscape encompassing land, water and coastal resources. Some models illustrate the advantages to regulating development activities and zoning; providing for spatial development planning to convert conflicts into synergies; and rehabilitating and restoring damaged ecosystems. These interventions help policymakers plan their commercial activities to avoid potential conflicts with other habitat users, and to take biodiversity loss and resource degradation into account.

ECOSYSTEM ACCOUNTING AND VALUATION

While economic opportunities can be derived from the exploration of fossil fuels, these benefits must be balanced against conservation, sustainable use and/or restoration. Econometric models illustrate how the total economic value associated with the sustainable management of ecosystems

is higher than the value associated with its conversion into farming, mining, logging or other intensive and unsustainable practices. Ecosystem valuations and ecological accounting provide evidence to justify conservation and an increase in protected or no-use zones. Often the true significance of ecosystems is ignored when the economic values of other proposed developments are calculated. If conservation of the natural environment is to become a viable investment option, all its benefits need to be recognised and quantified.

Conventional macroeconomic performance indicators do not provide adequate information about a country's natural wealth, the health of its environment and the depletion of its ecosystem service abundance. Natural asset accounting and the pricing of externalities can assist policymakers in designing intervention strategies to better reflect the value of ecosystem services and the sustainability of their use. The UN Environment Programme 2011 report, *Economics of Ecosystems and Biodiversity for National and International Policymakers (TEEB)*,⁴ examines the costs of biodiversity loss and ecosystem degradation, and calls on policymakers to undertake cost-benefit analyses and to accelerate, scale up and/or embed investments in the management of important ecosystems. It is important that all natural resource management approaches enhance Africa's broader sustainable development agenda.

INTEGRATED MANAGEMENT AND INCLUSIVE GOVERNANCE

The growing global trend is towards integrated, transboundary resource management within a broader spatial framework. Referred to as an 'ecosystem-based approach' (EbA), this spatial mapping tool provides information on current and expected human and industrial footprints in vulnerable zones, and recognises the importance of, and interplay among, terrestrial, marine and coastal systems and stakeholders in a specific landscape. The EbA is useful to balance multiple objectives related to benefits and ecosystem services. This is important when considering the interdependence between various sectors. The water-food-energy nexus, for example, recognises that the provision of these resources is inextricably interlinked, and that all sectors must be considered in an appropriate response.

Developing an ecosystem services perspective is important when establishing management priorities. Priorities can be determined by focusing on the areas and habitats that deliver or host the most valuable ecosystem services, and be based on the most serious threats to ecosystem services. Tools used to assist this planning include strategic environmental assessments and environmental management frameworks.

Decisions related to environmental sustainability are increasingly based on a system of co-operative governance that is inclusive, adaptive and gender-sensitive. Ecosystem services and their values are being integrated into mainstream economic planning and development policy at all levels. At the national level, services must be incorporated into existing regulatory mechanisms. This requires integrating ecosystem conservation strategies into national development and poverty reduction strategies; fisheries and forestry action plans; and pre-emptive policies, such as natural disaster risk management plans and climate change adaptation strategies. Centralised interdisciplinary forums of horizontal co-ordination are being developed within, and across, departments in national governments to facilitate co-ordination, and to examine overlap between economic development, energy, water and biodiversity.

Equally important is a devolved, vertical system of governance among the different spheres of government that includes partnerships and co-management structures between municipalities, local government and communities. Local communities are the key beneficiaries of these natural goods and services, and their buy-in and involvement will determine the success or failure of a given restoration, sustainable use or conservation project. It is imperative that local government incorporates indigenous knowledge solutions into policies and practices.

Organisations at sub-regional and pan-African level have a crucial role to play, considering the transboundary nature of natural resource governance. The AU and SADC need to adopt this ecosystem-based approach to resource management. Innovative suggestions in this regard include an African peer review mechanism that could be a co-ordinating instrument for an effective and consistent continent-wide policy on ecosystem protection.

PROMOTING SUSTAINABLE PRACTICES

Countries must address the causes of destruction to their natural resources, and develop sustainable and efficient practices to minimise these impacts. Where the loss of biodiversity cannot be avoided, governments and developers must find ways to limit their impact or compensate for the losses caused. Technological innovation and scientific research in the mining, energy and water sectors are helping to achieve this, and provide data to support sustainable alternatives. The trend, for example, is away from purely hard engineering solutions towards 'softer', hybrid solutions that include green infrastructure. Climate change response plans often incorporate coastal vegetation as natural barriers to sea-level rise.

Restoration activities are at the core of rehabilitating ecosystems and reversing their losses. Some 400 000 hectares of mangroves are being restored globally. Restoration is generally far more expensive than protection and it is often not possible to recover them fully. Large-scale restoration projects offer important socio-economic benefits. In many countries non-governmental organisations and communities are actively planting trees and earning revenue by collaborating with the private sector to offset carbon.

Strict licensing systems and environmental legislation can regulate destructive practices, especially through the use of rigorous environmental impact assessments (EIAs). Much work is needed to improve countries' ability to implement sound EIAs and conduct objective feasibility studies for new developments. This is urgent in the extractive, oil and gas sectors, including for new offshore exploration and proposed aquaculture and infrastructure development projects. The value of ecosystem services must be incorporated into all EIAs, and into mitigation or compensation plans and calculations.

Good governance prevents ecosystem loss as a consequence of corruption, lack of equitable revenue disbursement and illegal harvesting. Organisations such as the World Bank have set up frameworks for assessing and monitoring forest governance. Regional bodies such as the EU Forest Law Enforcement, Governance and Trade pursue initiatives that are aimed at reducing illegal timber imports to the EU internal market.

Private sector shareholder pressure promotes enhanced environmental and social responsibility. This can ensure that the corporate sector internalises environmental costs and compensates for water and biodiversity use and damage. Private initiatives have been set up to encourage voluntary codes of conduct and certification schemes, such as the Forest Stewardship Council.

INNOVATIVE FINANCING FOR CONSERVATION

New revenue options are available to support resource management and conservation. New payment mechanisms, with robust and participatory governance arrangements, could increase financing for local communities. The use of markets and market-based mechanisms has emerged to conserve and finance ecosystem services. Payment for ecosystem services (PES) schemes encompass innovative private deals (voluntary and obligatory), alternative financing schemes and government programmes. They are based on the premise that ecosystems provide valuable services and that, if marketed correctly, they would allow watershed and biodiversity conservation to pay

for itself and generate income for participants. These measures would encourage behavioural change, offering, where possible, additional employment benefits and supplementary income in exchange for the sustainable use of natural resources or conservation. PES schemes can offer financial incentives to protect non-market ecosystem benefits.⁵

Finance is more readily available in international financing mechanisms. African countries are lobbying for global agreements that include the holistic value of their ecosystems. Recently, progress has been made in calculating the value of carbon for coastal ecosystems (Blue Carbon) and financing under climate change mitigation frameworks.⁶

FRAMING INTERNATIONAL TARGETS AND BRIDGING THE SCIENCE-POLICY GAP

Although political progress has been made in multilateral forums such as the 2012 UN Conference on Sustainable Development (Rio+20), the challenge is to frame it within the new architecture for the post-2015 Sustainable Development Goals (SDGs). African countries need to push collectively for an SDG that relates specifically to productive ecosystems, environmental sustainability, respect for planetary boundaries and/or the maintenance of the global commons. This SDG must support Africa's own long-term sustainable development aspirations, as encapsulated in Agenda 2063. African countries must respect and achieve international goals, for example, the UN Framework Convention on Climate Change international climate mitigation commitments; UN Convention on Biological Diversity 20 Aichi Biodiversity targets and the Strategic Plan for Biodiversity 2011–2020; and goals from the UN Convention to Combat Desertification. These goals provide benchmarks against which countries can assess their own performance and be held accountable by the international community.

Resource management and planning must be based on sound, scientific data. The use of geographic surveys, inventories and remote sensing to map and assess the extent of ecosystems has increased. This information is needed to determine conservation priorities, and formulate policies that appropriately regulate resource extraction, trade and development. Policymakers use data to track progress towards their goals, and inform corrective action in a timely fashion.⁷ This should be done before concessions are granted and EIAs are conducted or permitted.

CONCLUSION

The rapid economic growth in African countries must be reconciled with the maintenance of ecological processes and biodiversity. The importance of maintaining healthy ecosystems to support development objectives is increasingly acknowledged, and governments are beginning to implement and strengthen management and planning tools to achieve this objective. Shared international experiences reveal the successes of multi-stakeholder, multi-sectoral approaches for long-term and integrated terrestrial, coastal and marine management. Best practices include the use of ecosystem-based management regimes for all ecosystems and their users, including mining, infrastructure development, ports, tourism, fisheries and conservation. Better ecosystem accounting is needed to make a compelling case for conservation and restoration, and enable the inclusion of ecosystems in economic frameworks for planning and management. These instruments are essential to raise awareness of the importance of ecosystem services, and to map, monitor and value them appropriately.

ENDNOTES

- 1 Romy Chevallier is a senior researcher of GARP at SAIIA.
- 2 Chevallier R, *Balancing Development and Coastal Conservation: Mangroves in Mozambique*, SAIIA Research Report. Johannesburg: SAIIA, November 2013.
- 3 *Ibid.*; Chevallier R, 'Valuing Africa's Mangroves: A Sustainable Future', SAIIA Policy Briefing, 74. Johannesburg: SAIIA, September 2013.
- 4 UNEP (UN Environment Programme), *Economics of Ecosystems and Biodiversity for National and International Policymakers (TEEB)*, report released by UNEP. Brussels: UNEP, November 2013.
- 5 Chevallier R, 'Blue Carbon: The Opportunity of Coastal Sinks for Africa', SAIIA Policy Briefing, 59. Johannesburg: SAIIA, November 2013.
- 6 *Ibid.*
- 7 Chevallier R, 'New science further highlights the important mitigation potential of coastal ecosystems'. *OUTREACH on Climate Change and Sustainable Development: A Multi-stakeholder Magazine*. London: Stakeholder Forum, <http://www.stakeholderforum.org/sf/outreach/index.php/previous-editions/cop-19/199-cop19-day10-water-and-oceans/11633-new-science-further-highlights-the-important-mitigation-potential-of-coastal-ecosystems>.

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