

Restoring Landscapes in South Africa (ReLISA): Nature-based solutions for climate, biodiversity and people

Background / starting point

Large-scale efforts to restore degraded lands are needed to adapt to climate change (especially with regards water resources), address biodiversity loss, and tackle high per capita GHG emissions whilst enhancing the resilience and livelihoods of poorer rural communities. Overstocking with livestock over the past 150 years was a key driver of land degradation. The cumulative effect of such drivers has been to greatly reduce carbon stocks, livestock and wildlife carrying capacity, biodiversity, infiltration of rainwater into aquifers, and baseflow of rivers.

Climate variability and weather extremes are already having profoundly negative effects on South Africa's water quality and availability. In the past five years, intense dry periods have threatened national food security, led to extreme water shortages and reduced crop yields and farmer income. Land degradation over many millions of hectares of grassland, savanna and thicket, as well as cultivated lands, intensify these impacts.

So far, restoration interventions have only begun at the scale of thousands of hectares, and not at the scale of millions of hectares. Poor rural communities have a particularly high dependency on well-functioning ecosystems, and currently their resilience to climate change impacts is very low. The need for restoration to address both environment and livelihood/equity matters, especially in rural areas of the country, has been thrown into sharp relief by the COVID-19 pandemic, which has led to more than 3 million job losses and almost half of all South African households having insufficient food. Restoration is part of 'Building Back Better'. Most restoration initiatives are limited in scope; they have been initiated by government agencies or NGOs, with only the limited involvement of the private sector. Reasons include:

- (i) lack of awareness of commercial impacts and dependencies on ecosystems;
- (ii) opportunities for bankable restoration activities being 'off the radar' (such as value chain development for sustainably produced goat meat, NTFP and other commodities, and projects for voluntary carbon market projects, which could fund the upscaling of thicket, grassland or savanna restoration); and
- (iii) coordination failures leading to 'locked-into' pathways as the main actors (government, civil society, communities, private sector) need to coordinate effectively towards large-scale restoration.

Effective restoration at scale contributes to environmental commitments and aspirations *inter alia* the Paris Agreement and South Africa's NDC, but also its NAP, NBSAP, as well as international policy targets such as Land Degradation Neutrality, the UN Decade of Restoration and the Bonn Challenge.

The key decision-making criterion in selecting sites and models for restoration activities is their potential for scaling and overcoming obstacles. In this way the positive livelihoods and environmental benefits of every Rand invested from project funds leverages restoration through business adoption in the service of the beneficiaries.

Main target groups and beneficiaries

The main beneficiaries are poor communities and farmers in selected degraded landscapes and critical watersheds (upstream), as well as urban populations and communities dependent on secured water provision (downstream). They will benefit directly through increased resilience to climate change impacts, secured provision of vital ecosystem services and enhanced sustainable livelihoods (employment and diversified income). Impact funds, other private sector investors are provided with viable business models, removed technical barriers and a pipeline of bankable investment opportunities for sustainable commodity production and carbon sequestration for voluntary carbon markets, subject to transparent monitoring and impact reporting.

National level and provincial government agencies will benefit from needs-based policy support for the implementation of their environmental and socio-economic targets, new technologies and innovative investment models, capacity building and tools for planning, implementation and monitoring. Agencies include DEFF (Branches: Climate change and Air Quality; Biodiversity & Conservation; Natural Resource Management); Department of Human Settlements, Water and Sanitation (DHWAS); Cooperative Governance (COGTA); Department of Agriculture, Land Reform and Rural Development (DALRRD); Department of Planning, Monitoring and Evaluation (DPME); and the National Planning Commission.

State-owned research and conservation institutions, especially the South African National Biodiversity Institute (SANBI), SANParks, the Water Research Commission (WRC) and the South African Environmental Observation Network (SAEON), will benefit through the provision of refined ecosystem restoration protocols and business models that increase the sustainability and efficacy of their conservation interventions.

CSOs and academia / universities will benefit from the publicly available tools, pilots (which can be used for strengthening the data / research basis) and targeted knowledge products, education and teaching materials.

Theory of Change: Program objectives, results, activities and structure

Component 1: Biophysical/economic assessments and planning for restoration (30%)

Output 1: *Viable sustainable land management (SLM) strategies that align with political priorities and stakeholder needs are identified and their economic benefits/costs and distributional impacts (i.e. effect on poverty) estimated.*

Outcome 1: *Decision-makers and stakeholders modify incentives and policies, and develop an innovative impact M&E system compatible with South Africa's existing monitoring and reporting systems for the land use sector.*

Work Package 1 (lead UNEP): ex ante assessment of landscape restoration opportunities – 20%

CONTRIBUTING: CSIR, EWT, UNESCO, UNIQUE, C4ES

- Activity 1: Identify priority sites and interventions and develop a long list of target sites, taking into account ecosystem services, state of degradation and other relevant criteria.
- Activity 2: Carry out comprehensive consultations with stakeholders at all levels, including communities and farmers, to create a shortlist of target sites and co-develop implementation scenarios – e.g. increased water availability through large-scale restoration in grasslands, savannas and thicket in upstream areas (**see maps in the additional documents section for details on the geographical locations within the biomes**).
- Activity 3: Identify technical, financial and political bottlenecks for implementation of preferred scenarios and develop landscape-specific restoration strategies.
- Activity 4: Biophysical modelling and non-market valuation (applied under a GIS platform) of the scenarios.
- Activity 5: Quantification of the social, economic and ecological benefits from all project implementation sites, including biomass, biodiversity, carbon sequestration, hydrological services and income streams/distributional outcomes; estimation of implementation costs and ex ante Return on Investment (RoI)
- Activity 6: Restoration opportunity assessments, including consultations and identification of funding options, development of detailed management plans for all priority protected and agricultural areas, GIS mapping, restoration protocols, and economic analyses.
- Activity 7: Introduce the UN System of Environmental-Economic Accounting (SEEA) to the National Treasury and the Ministry of Finance to embed ecosystem services into the national accounting systems as a basis for holistic decision-making on ecosystem restoration and sustainable natural resource management.

Work Package 2 (lead CSIR): MRV & impact monitoring – 10%

CONTRIBUTING: C4ES, UNEP, UNIQUE

- Activity 1: Enhance South Africa's MRV system for the land sector and the existing digital platform managed by SAEON, including by enhancing the exchange of information between different stakeholders, showcasing flagship restoration initiatives, and linking the MRV system with the UN Decade Information hub (the UN Decade on Ecosystem Restoration).
- Activity 2: Ensure outcomes of project restoration activities are compiled into the national GHG inventory and other UNFCCC reports, including the BTR and the NDC, CBD reports and UNCCD reports.
- Activity 3: Develop and pilot an innovative IT/app-based impact monitoring tool (planned for livestock) to inform investors, financial intermediaries and government agencies on key impacts (GHG emission reductions, water benefits, employment etc.)

Component 2: Leveraging private sector investments (15%)

Output 2: *Development of a pipeline of bankable investments that address specific investment barriers, tailored to the profiles of impact investors and financial intermediaries.*

Outcome 2: *Increased donor and private sector funding for ecological restoration.*

Work Package 3 (co-lead C4ES-UNIQUE): Business models & investment incubation – 15%

CONTRIBUTING: EWT, UNEP

- Activity 1: Conduct 10 pre-feasibility studies for business models on different restoration approaches in grassland, savanna and thicket, including assessment of investment barriers, carbon sequestration potential

for voluntary carbon markets (including method improvement for the certification of Soil Organic Carbon for best land use practices), and water generation potential.

- Activity 2: Develop at least 6 bankable restoration investment projects with an average size of 5,000 ha each (30,000 ha in total).
- Activity 3: Establish pilot demonstrations to identify cost-reduction potentials, hone restoration protocols for different landscapes and increase RoI, as well as for training practitioners.
- Activity 4: Establish a platform for matching bankable projects & investors: green tech exchanges, roadshows and roundtables with potential investors, agricultural finance providers and other financial institutions.
- Activity 5: Facilitate dialogues between investors and landowners and/or local communities to determine contractual arrangements for long-term investments.
- Activity 6: Training of trainers (ToT) for service providers, farmers and restoration practitioners on how to implement the honed restoration protocols in a cost-effective manner.
- Activity 7: Develop business cases for raising funds from donors and/or the private sector to implement Biosphere Restoration Plans.
- Activity 8: Facilitate voluntary carbon markets in grassland systems based on existing feasibility assessments and illustrated improvements in carbon sequestration.

Component 3: Direct Landscape-level interventions and on-the ground implementation (45%)

Output 3: *Technical support, coordination and guidance provided in selected rural landscapes and critical watersheds to assist stakeholders in applying restoration and ecosystem-based adaptation (EbA) measures in terrestrial ecosystems (rangelands, thicket, savannas).*

Outcome 3: *Increased resilience against climate change and improved livelihoods of communities and farmers through securing the provision of hydrological services to downstream /urban populations (~80,000 direct beneficiaries for restored areas, and ~200,000 in biospheres – ~50% women).*

Work Package 4 (lead EWT): Restoration of proposed and established Biosphere Reserves – 20%

CONTRIBUTING: UNESCO, CSIR, C4ES, UNDP, UNEP

- Activity 1: Facilitate formal priority Private Protected Area proclamation and verification, for community and privately-owned land, towards long-term security for areas of high biodiversity and water catchment value.
- Activity 2: Establish a new Grassland Biosphere Reserve with the Northern Drakensberg Strategic Water Source Areas (SWSA) as the core (leveraging on existing Protected Area Expansion work in this area).
- Activity 3: Implement targeted restoration actions including invasive alien plant (IAP) clearing (in priority riparian areas and catchments within SWSAs) and degraded habitat rehabilitation.
- Activity 4: Facilitate cross-sectoral restoration plans for priority ecosystems, including municipalities, civil society and private sector to integrate restoration into their short, medium and long-term planning.
- Activity 5: Pilot restoration measures in all priority protected and agricultural areas and upscaling strategies to showcase the potential of land- water - socio-economic activities in the priority ecosystems.

Work Package 5 (lead UNESCO): Water Funds, Payments for Ecosystem Services, GCF concept– 15%

CONTRIBUTING : EWT, CSIR, UNDP, C4ES, UNIQUE

- Activity 1: Develop water fund feasibility assessments for the project target areas.
- Activity 2: Develop online training materials on Payments for Ecosystem Services (PES) schemes and water funds through South African case studies.
- Activity 3: Develop & implement a novel Water Fund, actively engaging with tourism and agricultural sectors.
- Activity 4: Develop a GCF concept note on funding biosphere restoration and GEF8.

Work Package 6 (lead UNDP): COVID-19 / Green Recovery – 10% of total budget

CONTRIBUTING : CSIR, EWT, C4ES, UNEP SA

- Activity 1: Coordinate with national agencies on opportunities for job creation through grassland, savanna and thicket restoration and facilitation of cross-sectoral dialogues with government and private stakeholders on enhancing the ecological infrastructure to rebuild the post-COVID-19 South African economy.
- Activity 2: Develop a national investment plan for scalable ecosystem restoration, expanding nature-centered economies and value streams that promote socio-economic recovery for vulnerable populations and co-existence of people and biodiversity to assist in the post-COVID-19 economic recovery of South Africa, including resource mobilization plans from a variety of funding sources.

- Activity 3: Leverage ecosystem-based adaptation (EbA) and climate-smart agriculture (CSA) for sustainable food systems response to increase the resilience and access to nutritious food through increased availability of clean water by local communities living in critical ecosystems to COVID-19 and future pandemics.
- Activity 4: Carry out environmental education, communication and outreach activities for nature-based solutions for a COVID-19 green recovery.

Component 4: Dissemination and communication (10%)

Output 4: *The restoration models and approaches are translated into target-specific knowledge products, which are disseminated nationally and internationally.*

Outcome 4: *Restoration models and approaches for thicket, savanna and grasslands are used and applied by restoration projects and programmes at the national and international level.*

Work Package 7 (lead UNEP): Restoration knowledge hub, education and dissemination – 10%

CONTRIBUTING: CSIR, UNESCO, C4ES, EWT, UNIQUE

- Activity 1: Building on UNEP-PAGE and UNEP-TEEB guidance documentation and training materials, extended and modified to focus on restoration in South Africa, provide training on tools developed, data sources available and lessons learned on the evaluation of RoI in the project to (i) DEFF and other government departments and (ii) Universities such as Rhodes University in regions that have a high restoration potential.
- Activity 2: Develop and then keep up-to-date a project website that is a portal for methods and applications, best practice, lessons learned etc.
- Activity 3. Establish a Restoration knowledge hub: Collate data, reports and published papers - dissemination and sharing lessons learned from the South African restoration and EbA experiences through the UN Restoration Decade's digital hub, and coordination with similar initiatives globally.
- Activity 4: Develop innovative inter- and trans-disciplinary IT-based university and school (online) lectures on ecosystem restoration of South African biomes (including demonstration plots) and engage with the Department of Education on the mainstreaming of restoration into national curricula.
- Activity 5: Disseminate project objectives and outcomes in national and international policy fora, e.g. the Global Landscapes Forum, or side events of UNFCCC, UNCCD and CBD meetings.

OVERALL IMPACT: *Successful upscaling of proven nature-based EbA/SLM solutions in thicket, rangeland and savanna biomes leads to a transformational change of South Africa's land use sector, thereby helping the country to achieve its land degradation neutrality and NDC climate targets, conserve the unique biodiversity in its vulnerable ecosystems, and support a green recovery to the COVID-19 crisis.*

SPECIFIC IMPACTS: Adaptation in strategically important landscapes (e.g. key water catchments): More than 100,000 ha of grasslands, savannas and thicket under restoration on-the-ground through investments by the end of the project lifetime; enhanced conservation in more than 300,000 ha of existing biospheres. **Mobilization of funding for restoration and conservation:** > 50 million € of private sector finance; > 25 million € of public funds. **Mitigation:** More than 10 million t CO₂e sequestered (restoration + conservation) in 20 years, of which more than 2 million t CO₂e occur during project lifetime. **Biodiversity:** Enhanced conservation in more than 300,000 ha of critical habitats for flora and fauna in selected biospheres, plus support for establishing a very large new biosphere. **Sustainable development:** Contributions to South Africa's green economy, green recovery after the COVID-19 pandemic, and target-group specific education on restoration.

Involving local partners

Local partners will be involved through different approaches:

At **community / local implementation level**, most implementation partners are well established in the proposed landscapes. They can build on long years of local presence, good relationships with key stakeholders and successful pilot activities. All project partners as well as subcontracted partner NGO and institutions (e.g. SANPARKS, MeatNaturally, Global Water Partnership (GWP) and ICLEI) will ensure close and direct involvement with partner communities and farmers. All communities and farmers for potential pilot and upscaling activities will be informed and involved early on, adhering to FPIC principles (cf. section 3.2) and actively involved in the design, implementation, co-management and monitoring of the on-the-ground activities.

At **national and subnational levels**, key policy stakeholders (ministries and relevant agencies) will be invited to join the "program advisory board" and nominate focal points which will be regularly updated and informed about

project activities and progress. The lead for coordination at national level is with UNEP whereas other partners will facilitate coordination with regional policy stakeholders in the selected jurisdictions.

Relevance of the proposal to key funding aspects

The program focuses on **removing technical, financial and policy bottlenecks for the transformative change of South Africa's land use sector**, with a focus on leveraging different financial sources and laying the ground for the ecological restoration at landscape level of dominant biomes (grasslands, thicket, and savannas). Prioritizing key water catchment areas will immediately help address climate change mitigation and adaptation (upstream and downstream) by securing the future provision of vital ecosystem services and biodiversity.

The comprehensive activities across national, jurisdictional and local levels are driven by the aim of **upscaling proven and replicable on-the-ground activities and best land use practices through different value chains** (e.g. sustainably produced meat, mohair, mitigation projects for voluntary carbon markets). This will be complemented by efforts to tap into other funding opportunities (e.g. focusing on protected areas and challenging restoration opportunities, the "high-hanging fruit"). The **selected landscaped will serve as blueprints for further upscaling in other landscapes** in South Africa, and promoted through different and targeted dissemination activities, i.e. **transformational change via upscaling**.

The **main innovation** lies in its comprehensive, implementation-focused and needs-based approach (water, livelihoods, food security, etc.) which, with economic valuation evidence, makes large-scale restoration, sustainable management and effective conservation of degraded lands **investible for private** sector investors. This first depends on applying **state-of-the-art bio-economic modelling** to determine ex ante the potential Rol of different intervention options and then iterating; omitting this component would imply a somewhat arbitrary and scattergun approach – and ultimately reduced ecological and livelihood outcomes. Best land use practices, business models and innovative tools (e.g. IT-based solutions for impact monitoring) are not just developed on paper; the majority of program resources will be used for the upscaling of proven on-the-ground activities and resource mobilization of mostly private sector finance. This is also a corner stone for the program's **exit strategy and ensuring the program sustainability and achievements**: By developing a pipeline of bankable investment opportunities and matching them with respective investors replication will already start during the project lifetime. The strong in-country presence of the partners will give confidence to communities, farmers and political partners, as well as different investors, that technical support will continue beyond the program's lifetime, and be independent of funding from government budgets (**innovation, upscaling, exit strategy**).

Gender mainstreaming and participation is ensured through an inclusive implementation approach. All program activities will promote and should contribute to equal opportunities for women and men. During the appraisal phase, the partners will not only identify relevant disadvantaged and most vulnerable population groups but also identify options for their proactive integration and ensuring that they adequately benefit from the measures. This includes also all upscaling measures developed under the program: the partners will carry out due diligence investigations for the social and environmental impacts of each proposed investment and on-the-ground activity, and identify and implement respective risk mitigation measures (**gender mainstreaming and participation**).

The **project approach for ensuring transparency** rests on regularly informing all stakeholders through the proposed advisory board, continued field presence, and the homepages of implementation partners. Furthermore, the program will make the progress of implementation and the results of the impact monitoring publicly accessible. The knowledge and all relevant information generated by the program will be **documented and published following the standard of the International Aid Transparency Initiative (IATI) – (transparency)**.

All partners are **committed to contribute to mitigation**. We will **reduce business travel** to a minimum. The strong **local presence of the implementation partners** is key for this purpose. For communication and coordination, we will use our well-established modern **IT-based communication** modes. For unavoidable travel, we propose to budget and **compensate emissions using recognized institutions and standards (e.g. myclimate, atmosfair)** in accordance with IKI funding regulations (**climate neutrality**).