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Links between Climate Change Mitigation, Adaptation and Development in Land Policy and Ecosystem Restoration Projects: Lessons from South Africa

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KEY MESSAGES

- Development concerns (i.e. increasing employment) are the main driver of land restoration policy in South Africa. Landscape restoration through labour intensive thicket planting is a tool used to create jobs. Climate change mitigation is pursued as a way to financially sustain restoration activities through potential access to the carbon market.
- Climate change policy has the potential to drive projects that can foster “triple wins” across climate change adaptation, mitigation and development. However, simultaneous achievement of each of these is hampered by divergent priorities.
- Two ecological restoration case study projects were assessed ([Box 1](#)) and found to deliver a range of development benefits, adaptation opportunities and mitigation impacts, with development impacts dominating (see [Annex I](#)).
- Short-term employment opportunities have been achieved in both cases. However, capacity to deliver both enhanced climate adaptation and mitigation over the long term will depend on: (i) the future sustainability of the jobs being created, and (ii) the flexibility of projects to adequately implement actions targeting adaptation and mitigation.
- Enabling environments, such as improved legislative conditions that encourage access to carbon markets, are essential to deliver benefits for adaptation, mitigation and development. A sectoral approach will not deliver triple wins.
- Shifts towards sustainable land management can usefully be compensated by short-term and tangible alternative income. This can be generated through shifting the focus of projects and policy towards small-scale, business-driven, long-term approaches to restoration.

INTRODUCTION

Since the mid-2000s, there has been growing interest in identifying integrated climate change planning approaches that can achieve synergies for mitigation, adaptation and development. Opportunities to harness these benefits together are referred to as “triple wins”. Across Africa, South Africa boasts advanced research on climate science and presents a model that African nations can learn from. The objectives of South Africa’s climate change policy agenda have been coupled with development goals, with a focus on fostering economic growth by increasing employment. Under the 1997 Expanded Public Works Programmes (EPWP) and the 2012 EPWP Ministerial Determination, a range of labour intensive ecological restoration activities have been promoted through various “Working for”

programmes. These target multiple aspects of mitigation (e.g. sequestering carbon through thicket vegetation planting), adaptation (e.g. building gabions and storm water channels) and development (e.g. education and creating jobs). In 2004, the Working for Water Programme initiated the Subtropical Thicket Restoration Programme (STRP), with the ambition to set up a scientific platform to catalyse restoration investments in the Eastern Cape across one million ha of degraded subtropical thicket, mainly by planting Spekboom. The EPWP was broadened by the 2009 National Development Plan - Vision 2030, with a focus on employment and mitigation through carbon market engagement. Complementary objectives are pursued in the country’s Climate Change Bill (2018) and National Climate Change Response (2011). Table 1 summarises the main objectives of these public policy programmes.

Table 1. South Africa’s public policy programmes addressing triple wins in ecological restoration

Public policy programme	Objectives addressing adaptation, mitigation and development
Expanded Public Works Programmes (EPWP): Basic Conditions of Employment Act (1997); and Ministerial Determination (2012)	<ul style="list-style-type: none"> • Working for Ecosystems: reverse environmental degradation through ecological restoration; enhance carbon sequestration, water regulation and purification; improve catchment stability/resilience. • Working for Water: foster labour-intensive community development for environmental conservation. Create an enabling environment for skills training and health improvement. • Working for Land: restore degraded ecosystems to their original state. Address land degradation caused by overgrazing, soil erosion and unsustainable farming.
Subtropical Thicket Restoration Programme (STRP) (2007-2016)	<ul style="list-style-type: none"> • Demonstrate feasibility of restoring thicket at a farm scale to provide biodiversity gains and carbon sequestration on a landscape scale through labour intensive activities.
National Development Plan – Vision 2030 (2009)	<ul style="list-style-type: none"> • Protect and enhance environmental assets and natural resources as a basis for economic growth and development. • Increase employment to pursue economic growth. • Reduce greenhouse gas emissions; entrench an economy-wide carbon price. • Broaden the EPWP to cover 2 million full time jobs by 2020.
Climate Change Bill (2018); National Climate Change Response White Paper (2011); Nationally Determined Contribution to the United Nations Framework Convention on Climate Change (2015)	<ul style="list-style-type: none"> • Build effective climate change responses and long term transition to a climate resilient, lower carbon economy and society in the context of an environmentally sustainable development framework. • Establish a national environmentally sustainable development framework that fosters equitable access to development. • Implement ecosystem-based adaptation. • Develop and implement complementary mitigation policies and measures that maximise job creation and developmental benefits.

WHY IS THIS TOPIC IMPORTANT?

These policy drivers played a major role in initiating local projects that pursue ecological restoration. However, the capacity to set adequate objectives that simultaneously address mitigation, adaptation and development is hampered by the difficulty in engaging locally to tailor actions to address community-specific needs. There is a need to advance understanding of how best to assess and integrate local-level perspectives into climate policy and project-level practices.

Our research identifies major opportunities and challenges in integrating community perspectives into policy and project development and implementation through two case studies in South Africa. It provides valuable lessons that can help

South Africa's government programmes improve restoration efforts and build a success story from restoration activities. Lessons can be applied across sub-Saharan Africa more widely, in order to help achieve triple wins.

RESEARCH AIM AND CASE STUDIES

Two ecological restoration case studies driven by the above programmes were analysed to (i) investigate how policy drivers can support project delivery of triple wins, and (ii) evaluate community-level perspectives (Box 1). Both projects are in marginalized/vulnerable areas with high levels of unemployment, poverty and ecological degradation caused by overgrazing under historical land use, exacerbated by climate change.

Box 1. Selected ecological restoration case studies, South Africa

Jobs 4 Carbon



Photo: Spekboom plant, Vanwyksdorp, 2018

Jobs 4 Carbon, initiated in 2014 and managed by the Wildlife and Environment Society of South Africa, is located within the Gouritz Cluster Biosphere Reserve in Vanwyksdorp, Western Cape. Jobs 4 Carbon restores degraded thicket through Spekboom planting, aimed at creating employment and developing alternative income streams from the carbon market.

Living Lands

Since 2008 Living Lands has operated in the Baviaanskloof Hartland, Eastern Cape, with the aim of creating a "living landscape". This has been pursued through various restoration, catchment management, awareness raising and community building activities, including thicket restoration through Spekboom planting. They support transitions from livestock to lavender/rosemary farming for essential oil production.



Photo: Silt traps and brushpacking, Baviaanskloof, 2017

METHODOLOGY

Research took place between 2016 and 2018, with fieldwork carried out between February and April 2017. Data were collected through mixed-methods which involved policy analysis, 52 semi-structured interviews (31 at community-level; 21 with policy makers, project developers and academics), 7 site visits and 4 focus groups. These data were analysed using thematic analysis (see [Annex I](#)). Stakeholders' perspectives on research findings were assessed during a field visit in May 2018 and integrated into the recommendations below.

FINDINGS & RECOMMENDATIONS

Adequate planning and prioritisation are key to deliver effective adaptation, mitigation and restoration development, as well as to mitigate risks and safeguard government investments. A shift away from short-term development and ecological improvements towards **setting long-term restoration plans and funding agreements within defined geographical areas** would be beneficial.

Local ownership and championship are key to achieve results. **Shifting the management of teams of contracted workers from government implementers to local land owners, or field workers employed by projects, and prioritising the establishment of (fewer) long-term jobs over short-term contracting**, would (i) foster more effective restoration, by reducing mortality rates of planted Spekboom (thanks to effective selection of planting sites and improved planting techniques), and (ii) sustain long-term development impacts.

Access to the carbon market is limited and opportunities could be more strongly pursued by projects. **Setting up adequate legislative and enabling environments, such a carbon tax supporting entry into the market**, would increase capacity to sustain restoration through carbon revenues.

Broader reporting criteria beyond finances, jobs created and areas planted could enable consideration of economic development impacts and restoration effectiveness (e.g. mortality rates, ecology, carbon sequestration, water recharge), making reporting less rigid and narrow. **Identifying stakeholders, re-skilling staff and creating institutional arrangements that link monitoring to planning, prioritisation and implementation** would foster more effective restoration and engagement between projects and communities.

The replanting of thicket needs to be combined with wider erosion control measurements and restoration activities. **Increasing operational flexibility under funding agreements by enabling access to co-funding** can cover a broader spectrum of project costs and deliver wider restoration and development benefits. Engaging with private sector funding has been shown to boost higher operational freedom.

Farm income is reduced by shifts from livestock-intensive farming towards alternative sustainable practices. **Setting up compensation schemes to mitigate initial losses of farmers** would increase their involvement in the projects and restoration.

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Annex I. Framework for analysis of adaptation/mitigation/development benefits of case studies and findings

Legend: J4C (Jobs for Carbon); LL (Living Lands); STRP (Subtropical Thicket Restoration Programme)

Indicators	Key (selected) findings
ADAPTATION	
Structural	
<ul style="list-style-type: none"> Built environment: ponding, soil & water conservation 	<ul style="list-style-type: none"> Restored alluvial fans, gullies and wetland through facilitation of EPWP’s work on the ground (LL)
Social	
<ul style="list-style-type: none"> Educational: awareness raising Informational: community-based adaptation plans Behavioural: changing cropping & livestock practices and livelihood diversification 	<ul style="list-style-type: none"> Supported research of 100 students. Developed participatory landscape plan on integrated catchment rehabilitation (LL) 1,220 ha of land set-aside for conservation (J4C) “We adapt to lack of water by removing livestock and switching crops to lavender and rosemary for essential oil production, which consume a fraction of water than fodder” (land owner, LL)
MITIGATION	
<ul style="list-style-type: none"> Trees planted, soil restored and carbon sequestered 	<ul style="list-style-type: none"> Performed baseline carbon sampling, but: “baseline studies on each plot planted were needed. Not done as too expensive” (J4C) “We trade future benefits from carbon with more immediate benefits for water and livelihoods” (LL)
DEVELOPMENT	
Human	
<ul style="list-style-type: none"> Skills, knowledge, training Labour power Livelihood diversification Health 	<ul style="list-style-type: none"> 298 temporary workers employed through STRP’s contracting in 2004-2016 - on 21-days contracts, total of 7,932 working days (LL) 9 full-time workers employed in 2015/18: “We prefer to employ a few permanent workers [instead of contracting] as it provides better long-term upliftment” (LL) 60 full-time workers employed in 2014/16, 24 in 2016/18 (J4C) “J4C is a better job [than contractors]... I learn a lot” (worker, J4C)
Social	
<ul style="list-style-type: none"> Networks, connectedness, relationships of trust Information exchange, empowerment, ownership 	<ul style="list-style-type: none"> “Since 2014 we had a lot of communication activities. This is part of their success story” (land owner, LL) “Their manager is able to keep people together” (land owner, J4C)
Natural	
<ul style="list-style-type: none"> Access to land, water, wildlife, flora, forest Soil organic carbon 	<ul style="list-style-type: none"> Spekboom will stop erosion and improve water retention (land owner, J4C) “They stop erosion, build up soil and turn places green” (worker, LL). However, the testing of alternative restoration techniques has not yet produced observable large-scale impacts
Physical	
<ul style="list-style-type: none"> Infrastructure and production equipment 	<ul style="list-style-type: none"> Under a 20-year operational timeframe, a distillery was built to support farmers produce essential oils to: “promote sheep and goat removal to stop degradation and generate alternative income” (LL)
Financial	
<ul style="list-style-type: none"> Savings, access to regular income and credit, insurance 	<ul style="list-style-type: none"> No direct financial development benefits were reported. Hopes expressed by workers that the projects will continue to work with the community in the long term and sustain regular income