

Component 2: Leveraging private sector investments

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

CONTRIBUTING: EWT, UNEP



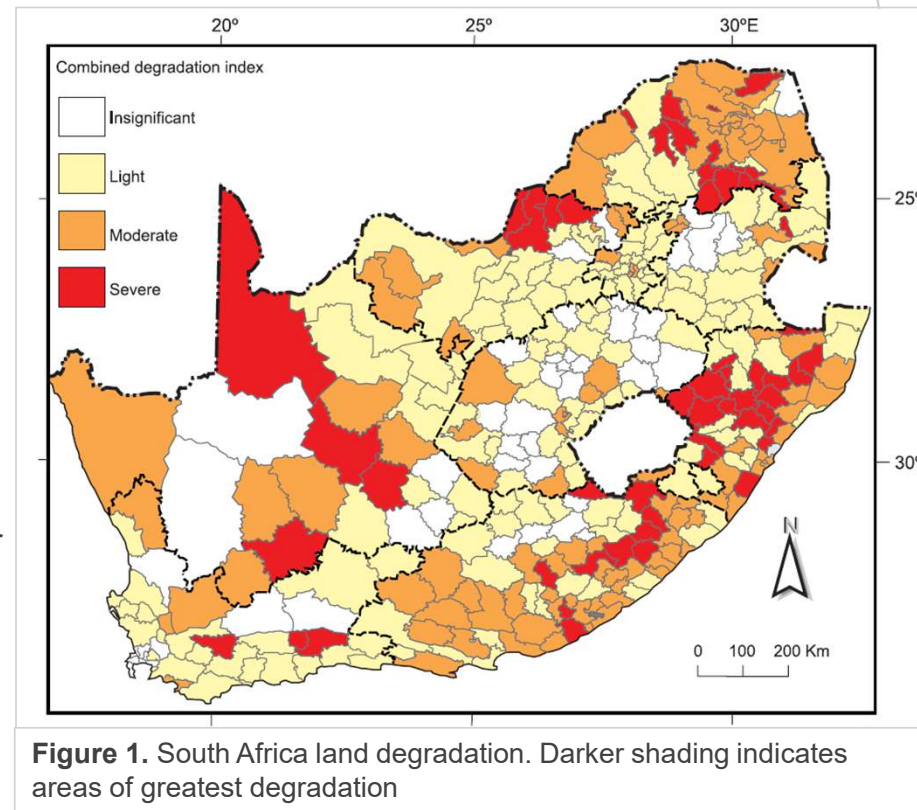
The South African context: environment

► State of the environment

According to the State of Environment Report, land degradation is one of the most significant environmental challenges in the country. It is estimated that **nearly 60% of the land is degraded** and 91% prone to desertification and droughts.

► Need for large scale efforts

Given the scale of the problem, there is a need for large-scale efforts to restore degraded land in South Africa.



Success stories

► Globally

Unique and C4 are involved in the restoration of tens of thousands of hectares of degraded landscapes across the globe through private investment.

► In South Africa

Restoring thousands of hectares of degraded land within the thicket biome through the work of AfriCarbon.













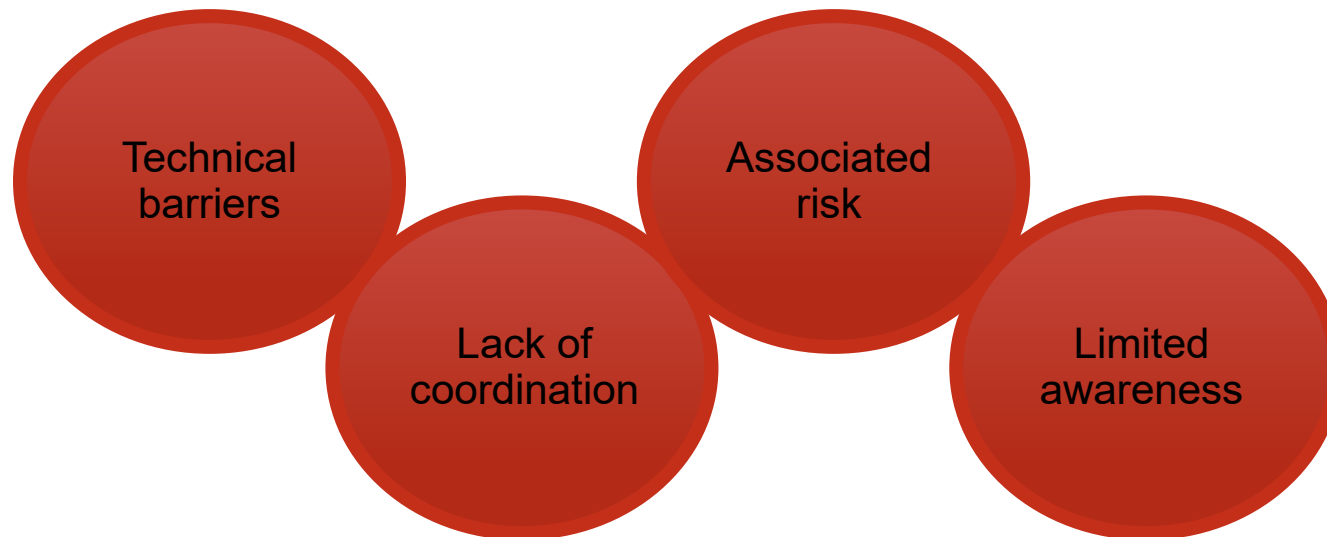
The South African context: challenges

- ▶ **Limited involvement of the private sector**

Despite the need for large-scale efforts to restore degraded land in South Africa, there has until now been limited involvement of the private sector.

Most of the land restoration projects in the country have been led by government or non-governmental organisations, with little participation from the private sector.

- ▶ **Reasons for lack of involvement and ToC of WP3 – identify / quantify / reduce / mitigate investor risks AND demonstrate benefits beyond carbon (ROI, social and environmental benefits)**



The South African context: challenges

Technical
barriers

Lack of
coordination

Associated
risk

Limited
awareness

- ▶ how to restore localised vegetation types most effectively
- ▶ how to manage livestock and/or wildlife in restored landscapes
- ▶ how to predict ecosystem carbon stock gains and improved water flow
- ▶ how to measure biodiversity to generate biodiversity credits
- ▶ how to ensure land tenure is secure over decades in private and communal lands

- ▶ agricultural and ecological restoration sectors seldom engage on local or national platforms
- ▶ potential project developers do not have platforms for engaging with investors (Connecting CEOs to Communities; C3)

- ▶ insecurity of land tenure may put the carbon, biodiversity and water gains at risk through time
- ▶ livestock husbandry, wood harvesting and/or agriculture may reverse ecological restoration gains through time

- ▶ potential project developers are not aware of the financing opportunities in the voluntary carbon market, biodiversity credit market and water funds
- ▶ the different 'journeys' of securing finance in the private sector are generally not well understood in terms of how to convince investors to embark on large-scale restoration

The investment landscape

The investor landscape is diverse, comprising **conventional investors** interested primarily in financial ROI, **socially or environmentally orientated actors** for which financial ROI is a negligible consideration, and **impact investors** that aim to address social and environmental challenges while generating financial profits

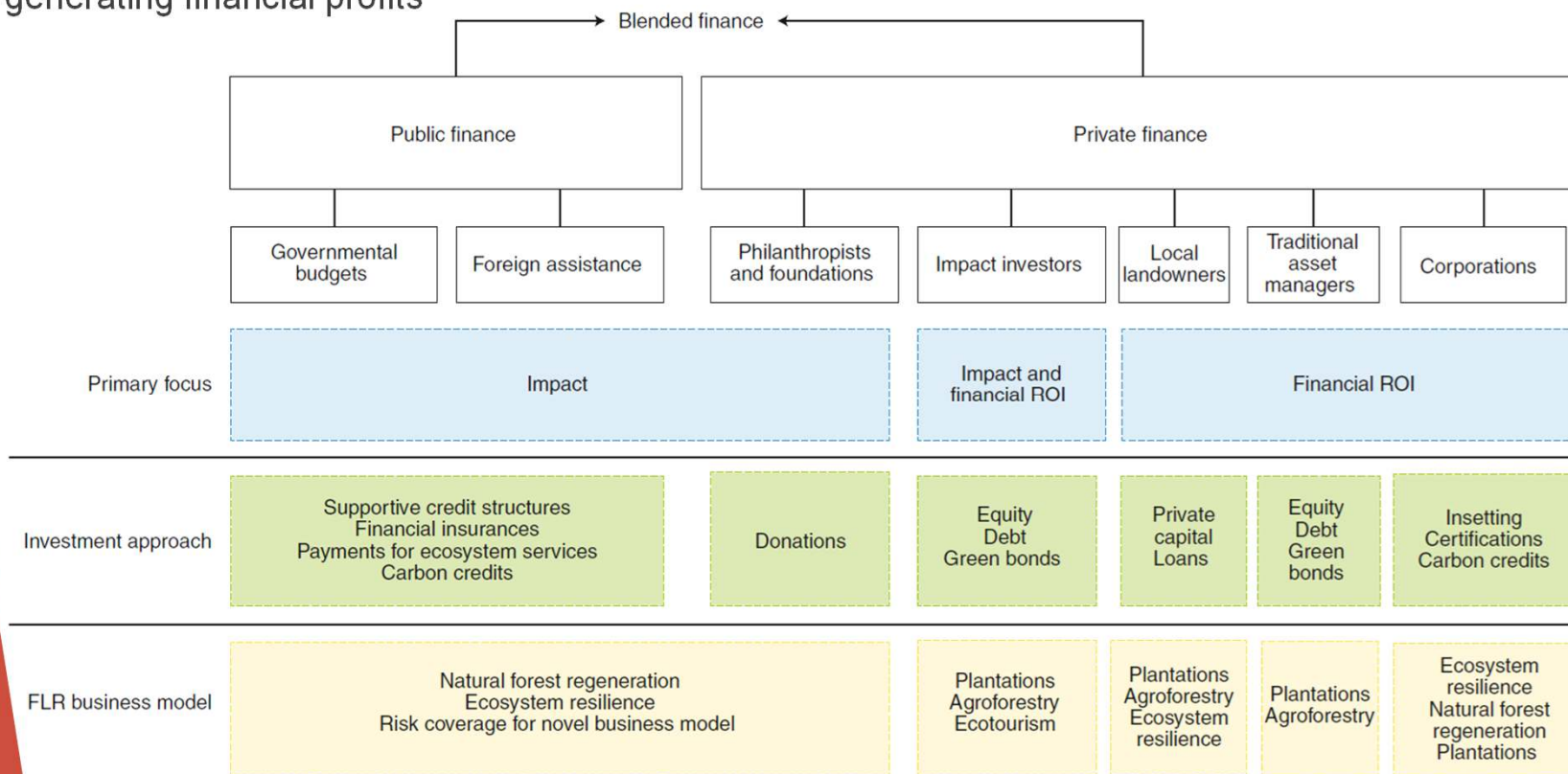


Figure 2. A typology of investment approaches and options for FLR

Source: Löfqvist S. & Ghazoul J. 2019. Private funding is essential to leverage forest and landscape restoration at global scales. *Nature ecology & evolution*, 3(12):12-1615. Available at: <https://www.nature.com/articles/s41559-019-1031-y>

Barriers for investment

- ▶ The more degraded the landscape, the higher the cost of restoration and the higher the risk of the investment.
- ▶ Different investors are willing to accept different levels of risk.

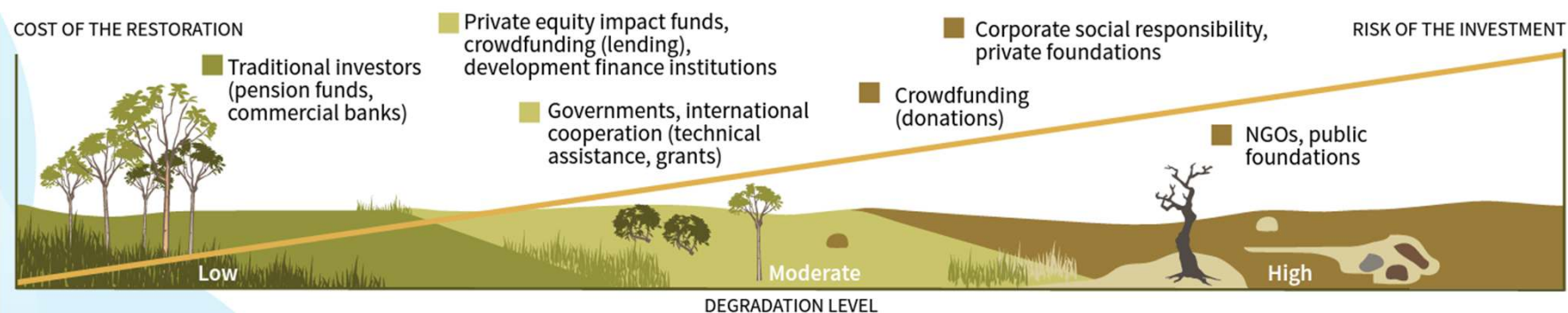


Figure 3. Investors and risk

- ▶ **Key question for discussion – focus of this project’s activities:**
 - ▶ restoration projects matching the risk appetite of private investors (impact / asset)
 - ▶ VERSUS “high-hanging fruit” (e.g., public / blended finance) – different sources / mechanism (incl. PFES)

Private sector investment mechanisms

- ▶ Private equity
- ▶ Impact investment

- **Voluntary Carbon Market (VCM)**

Carbon credits are sold on the voluntary carbon market as tradable commodities that represent a reduction or removal of one metric ton of carbon dioxide equivalent (MtCO₂e). Over 30 carbon offset registries operate globally to verify carbon credits – including, amongst others:

- i. VERRA Verified Carbon Standard (VCS)
- ii. Gold Standard
- iii. Complementary: VERRA's Climate, Community & Biodiversity Standards (CCBS)
- iv. 4th party verification (e.g. ABATABLE)

- ▶ Blended Finance

Private sector investment mechanisms

▶ Other ecosystem service markets

▪ **Water Funds**

- Water Benefit Standard (WBS)
- Alliance for Water Stewardship (AWS) Standard

▪ **Biodiversity credits**

- Biodiversity and Ecosystem Services Network (BES-Net)
- Verified Conservation Areas (VCA) Standard

▪ **Payment for Ecosystem Services (PES) Schemes**

▶ Key questions:

- include in work of WP3?
- contributions to other WPs to create a better and more diverse enabling environment for FLR investments using other mechanisms besides the VCM (e.g. GCF concept note / Water Funds / int'l & gov't programs)?

Planned activities under WP3

- ▶ **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.

Potential additional activities

VCM restoration investment-related:

- ▶ Baseline definition of biodiversity through Eco-acoustics / environmental DNA (for each biome) – create basis to provide evidence on restoration impacts on biodiversity → link to WP1, potentially to WP2 (impact monitoring)
- ▶ Application in areas under restoration / VCM projects
- ▶ Analysis of water impacts in specific proposed investments

Enabling environment / bigger picture (case for restoration) – contributions:

- ▶ Quantification of avoided erosion and hydrological services for all three target biomes (based on the availability of data and partner interest to close data gaps)
 - could be integrated into the impact monitoring tool of CSIR or be used for the bigger picture (WP1)
 - → contribution to SDG 6 and related reporting (target 6.6: “protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes”)

Potential involvement in other WPs

▶ WP 1:

- **Activity 1:** Identify priority sites and interventions and develop a list of target sites, taking into account ecosystem services, state of degradation and other relevant criteria.
- **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.

▶ WP 2:

- **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.)

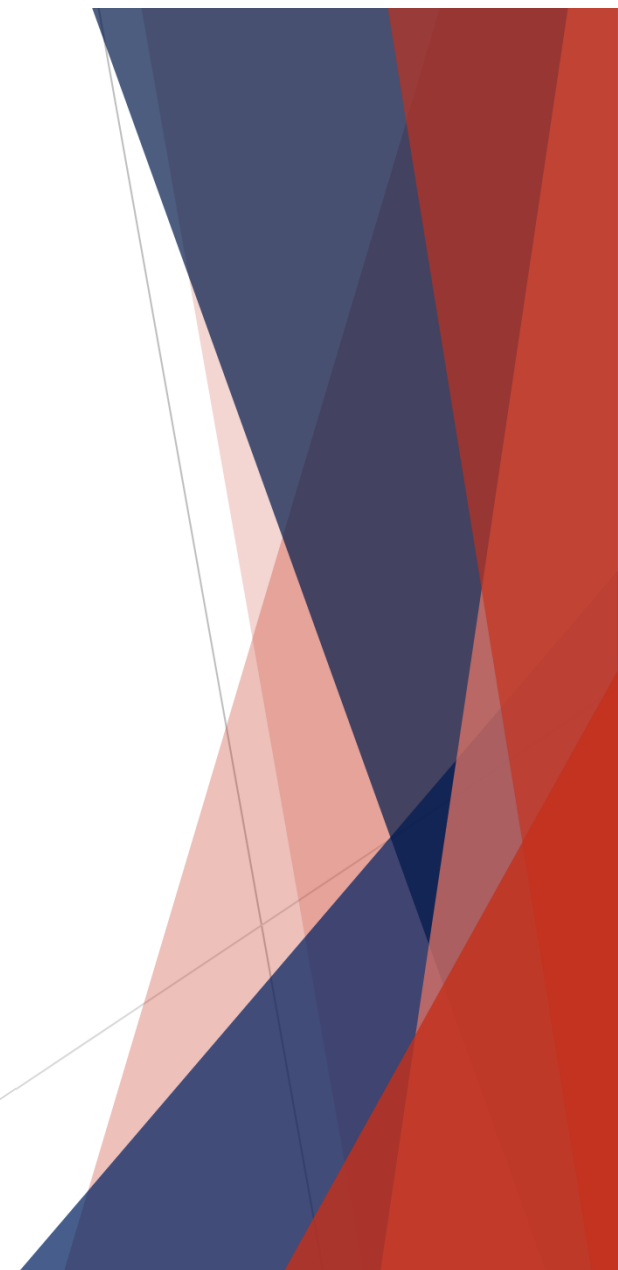
▶ WP 4:

- **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.

▶ WP 5:

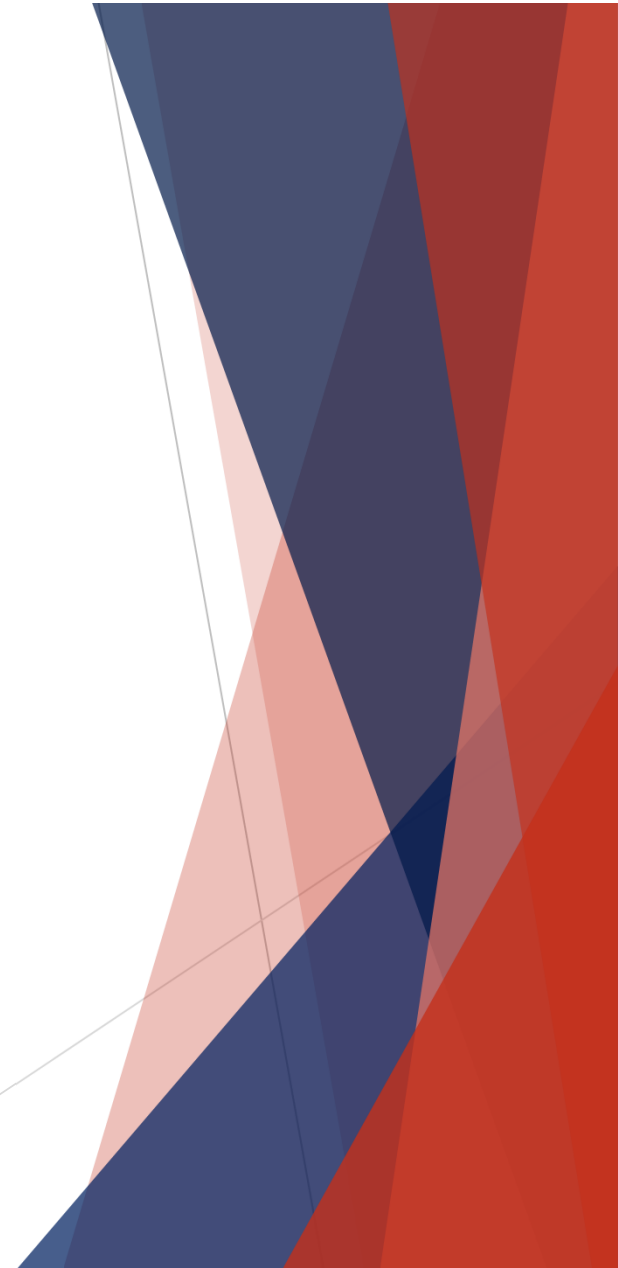
- **Activity 1:** Develop water fund feasibility assessments for the project target areas.

Thank you!



Key questions

- ▶ Restoration projects matching the risk appetite of private investors (impact / asset) VERSUS “high-hanging fruit” (e.g., public / blended finance) – different sources / mechanism (incl. PFES)
- ▶ Include other ecosystem markets in work of WP3?
- ▶ shift resources (of unique / C4ES) to activities of other WPs to create a better and more diverse enabling environment for FLR investments using other mechanisms besides the VCM (e.g., GCF concept note / Water Funds)?



Global scale ⇔ local interventions

- ▶ UN Decade on Ecosystem Restoration
- ▶ UNFCCC Paris Agreement
- ▶ The Bonn Challenge
- ▶ 2030 Agenda for Sustainable Development
- ▶ The Post-2020 Global Biodiversity Framework
- ▶ AFR100



PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11



afr100

The funding challenge

- ▶ To scale-up restoration, investments must be aligned with interventions to manage social, environmental and financial risks effectively, deliver direct and indirect financial ROI, and meet expectations of investors, project owners and other stakeholders.
- ▶ Identifying restoration opportunities is therefore not only a question of defining the environmental benefits of restoration but also requires inclusion of investor and stakeholder priorities, and matching risk exposure to risk acceptance.
- ▶ Due to the high cost of restoration, private sector investment is crucial in scaling up and securing long term viability of interventions.



Figure 1. The cost of landscape restoration

Source: Walter S. 2015. Sustainable financing for forest and landscape restoration – key messages. Food and Agriculture Organization, Rome. Available at: <https://www.fao.org/3/i5031e/i5031E.pdf>

Private sector investment mechanisms

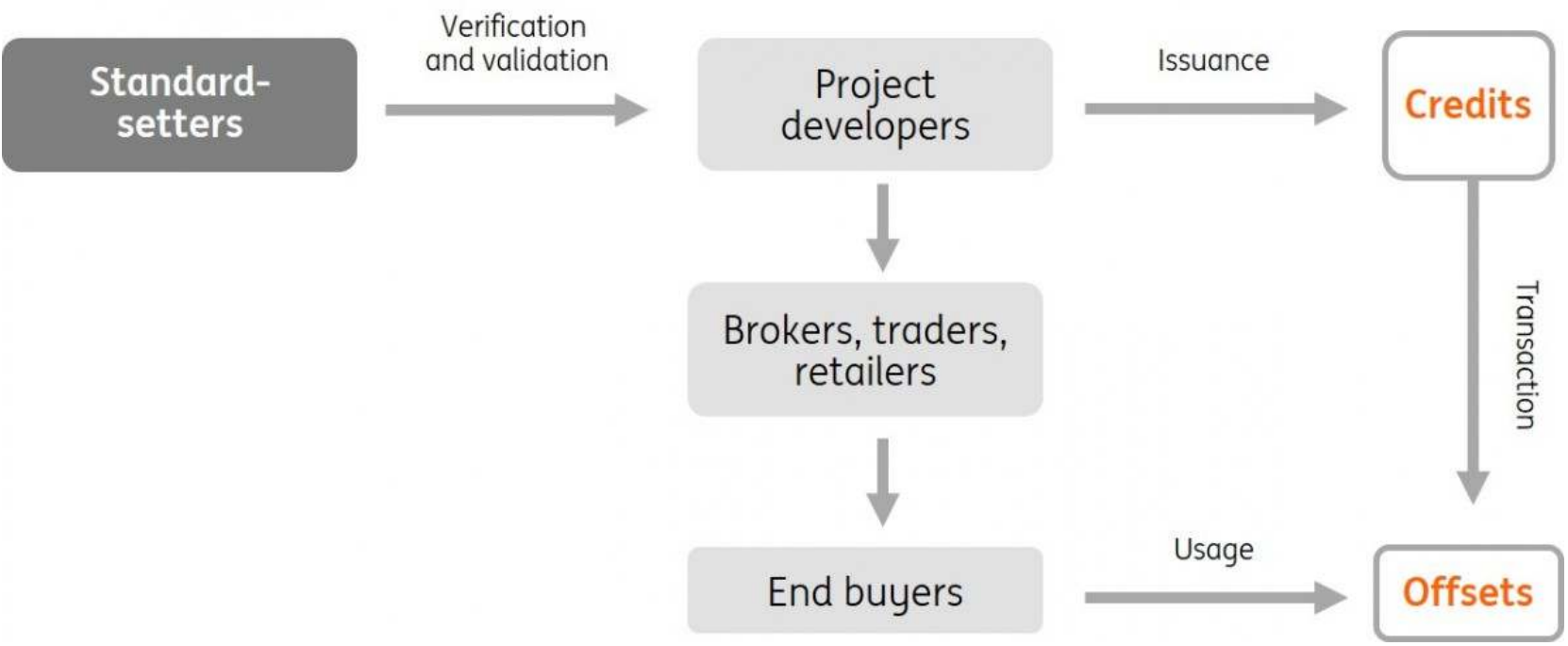


Figure 4. Schematic overview of the voluntary carbon market

Source: Hieminga G. 2022. Voluntary Carbon Markets are changing for the better. ING Think. Available at: <https://think.ing.com/articles/voluntary-carbon-markets-are-changing-for-the-better-but-there-are-caveats>

Opportunities of VCM

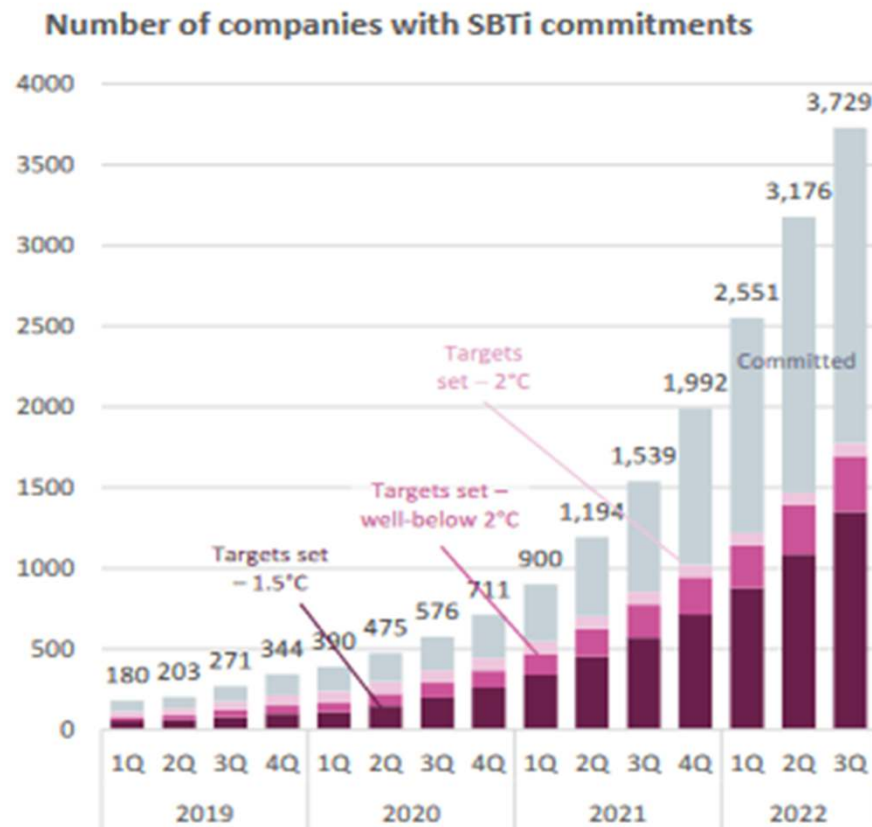
- ▶ As the all-time VCM value reached USD 8 billion in 2021, the annual market value almost quadrupled from 2020 levels.



Figure 5. Voluntary Carbon Market size by value traded carbon credits, pre-2005 to 31 Dec. 2021

Source: Forest Trends Ecosystem Marketplace. 2022. the Art of Integrity: State of Voluntary Carbon Markets, Q3 Insights Briefing. Forest Trends Association, Washington DC. Available at: <https://app.hubspot.com/documents/3298623/view/433338095?accessId=3abc8b>

Why demand for VCM carbon credits grows: net zero targets of private companies



Source: Trove Research, 2022

Impact monitoring to scale nature-based investments

Biodiversity monitoring using ecoacoustics

Dr. Thomas Asbeck



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Biodiversity impact monitoring in times of climate change

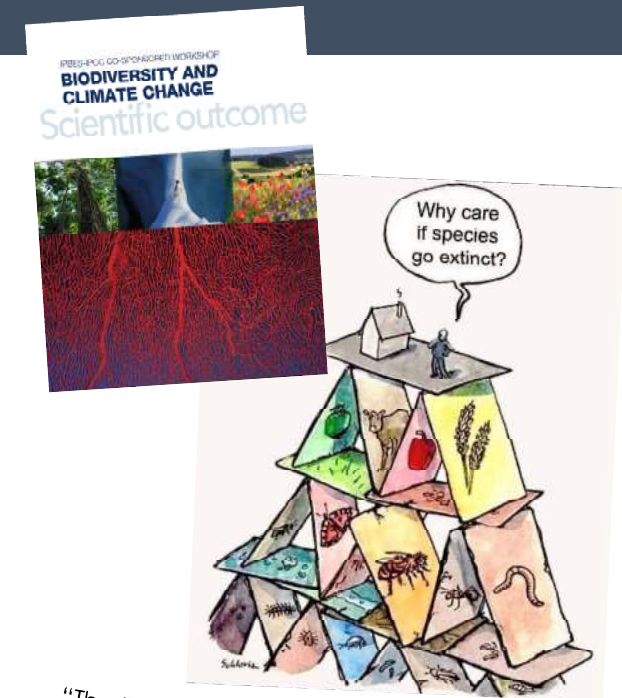


Biodiversity components

- functional and species diversity
- structural information about ecosystem (land use type)
- single indicators not suitable to inform about biodiversity impacts

Monitoring objectives

- tracking of positive impacts
- baseline definition and replicable information about (long-term) biodiversity changes
- allows demonstrating “do-no-harm”
- allows for reporting of additional benefits linked to KPIs of investors
- allows for biodiversity asset valuation



"The link between biodiversity loss and climate change is growing ever clearer. Even as the acceleration of the climate crisis fuels the loss of habitats and species, the biodiversity crisis fuels the loss of the ecosystems that act as important carbon sinks, in turn hastening the rate of climate change."¹

Definition of Convention of biological diversity (CBD, 2006): "Biological diversity" = variability among living organisms from all [...] ecosystems [...] of which they are part; this includes diversity within species, between species and of ecosystems.

¹ Pörtner et al. (2021). Scientific outcome of the IPBES-IPCC co-sponsored workshop on biodiversity and climate change. Zenodo. <https://doi.org/10.5281/ZENODO.4659158>

Ecoacoustic monitoring for impact assessment



- Capturing of sounds produced by acoustic active species groups
- Estimation based on standardized and accepted index value
- Digital recording: time/cost efficient
- Results transparent and comparable over time
- Combination of different monitoring systems possible



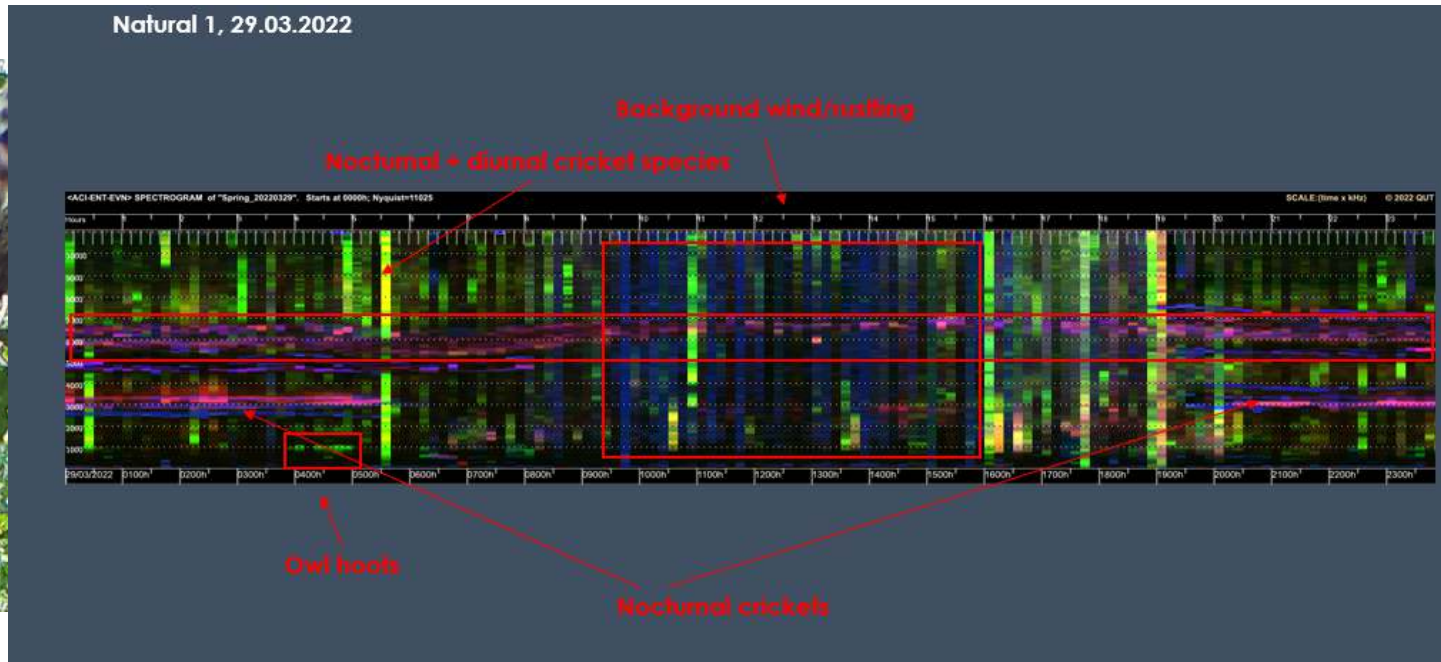
Sound recorder

Camera trap

Combination of ecoacoustics and camera traps



South American coati (*Nasua Nasua*)

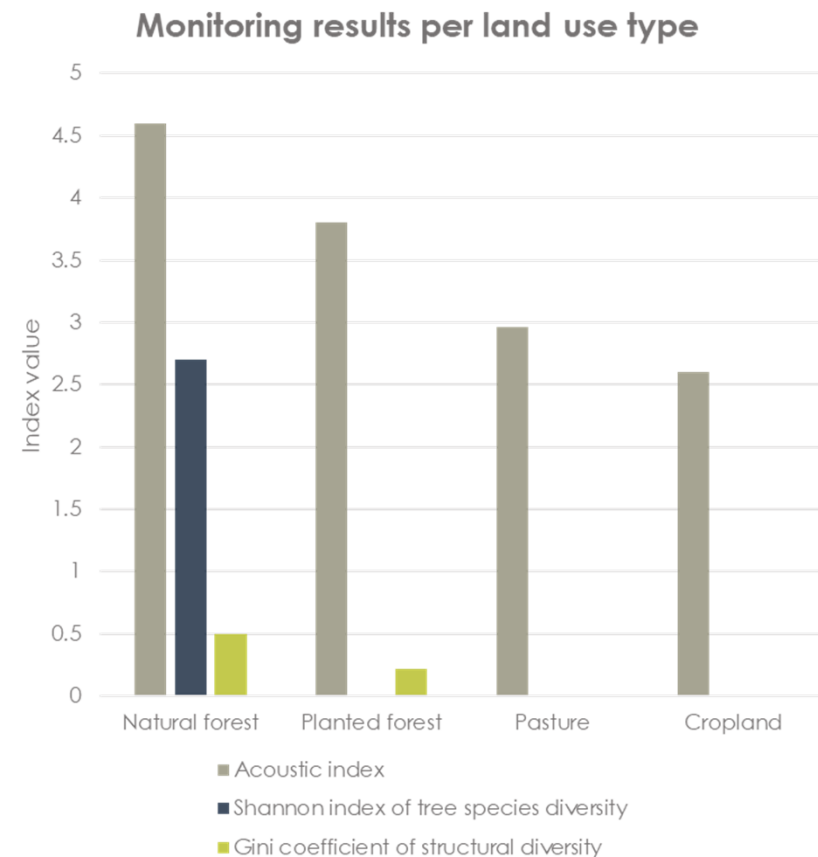


Impression of forest type

Biodiversity impact reporting of investors



- Standardized indicators for ecoacoustic/structural components
- Reporting on biodiversity impacts possible through ecoacoustics
- Use cases in Paraguay/El Salvador
 - indicator definition
 - monitoring
 - validation by local biologists
 - repeated inventories



Advantages of digital biodiversity monitoring



Features

- **robust** and comprehensive due to **detailed** data – covers more than one species group
- **transparent** due to standardized index
- **repeatable** & **scalable** due to systematic sampling
- **time efficient** (6 weeks of sampling; 3 field days)
- **cost-effective** compared to classic surveys
- **digitalized** work-flow
- **high acceptance** from **local actors** (coffee farmers and biologists)

Outlook

- integration in presented impact monitoring app
- development of additional use cases
- repeated inventories in existing use cases (FLR, planted forests, coffee, regenerative agriculture)



Thanks to our project partners
and funding organizations!

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