INVESTMENT FACTSHEET

AFFORESTATION, REFORESTATION AND REVEGETATION

Supported by: RAMO

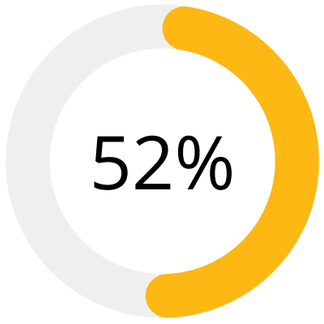
Report by: GROUNDD

INVESTMENT FACTSHEET

CATALYSING SUSTAINABILITY OF ARR IN VANDUZI AND BARUE DISTRICTS

MANICA, MOZAMBIQUE

ENABLING CONDITIONS - CATALYSTS FOR SUCCESS



Supportive Policy Framework

Mozambique has made strong national commitments to land restoration through frameworks like the Forestry and Wildlife Law, the Carbon Market Activation Plan, and its endorsement of the Bonn Challenge. These policies create a legal foundation for ARR investment and carbon market participation, though localized implementation and institutional coordination remain key areas for improvement.

Emerging Carbon Market Infrastructure

The country is rapidly positioning itself in global carbon markets, with 1.7 million credits issued in 2022 and jurisdictional VCU rights secured in districts like Barué and Vanduzi. Platforms like Open Forest Protocol are expanding access for smallholders, making MRV and certification more inclusive and affordable. The groundwork is being laid for large-scale, transparent ARR projects.

Growing Institutional Interest

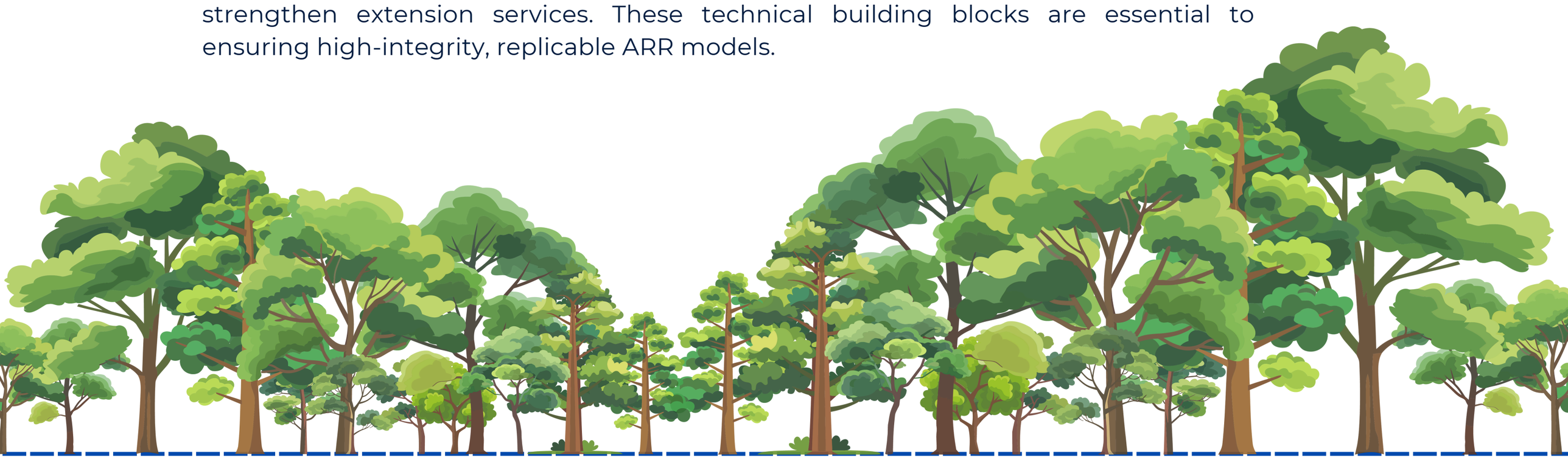
Development partners and private sector actors are showing increasing interest in nature-based solutions and ARR. Existing pilot projects and demonstration sites are building momentum for scaled implementation. With targeted funding and technical support, this growing ecosystem of stakeholders can provide the backbone for long-term ARR success.

Community Receptiveness with Support

While ARR is not yet a top local priority due to its delayed returns, communities are open to participation when projects are paired with agroforestry, NTFP value chains, and early employment opportunities. Secure land tenure through DUATs and participatory benefit-sharing mechanisms can significantly improve local engagement and ownership.

Technical Foundations Are Emerging

Mozambique is building its national capacity for ARR, including nursery networks, skilled forestry technicians, and access to satellite-based MRV systems. However, further investment is needed to scale training, expand access to digital tools, and strengthen extension services. These technical building blocks are essential to ensuring high-integrity, replicable ARR models.



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FINANCIAL VIABILITY

ASSUMPTIONS

- ☑ Carbon Price
- ☑ Carbon Sequestration Rate
- ☑ Market Demand Growth Rate
- ☑ Maintenance Costs

SCENARIOS

1ha

Smallholder household converts fallowed/degraded land into an agroforestry or reforestation system - guided by SUSTAIN Pro. Early returns are modest, approximately $200 ha/year. Carbon credit revenues gradually increase over time as carbon prices rise and trees mature. By the second decade, the same hectare could generate $1,000–$2,000 per year, offering families a long-term, hard currency income stream.

100ha

Reflects a community-level approach, where local stakeholders collectively manage and benefit from ARR. Use of traditional planting techniques and local seed sourcing, focused on areas designated for restoration. Profits from carbon credits and sustainable resource management are reinvested into communal goods (schools, water systems, or health services), strengthening the social fabric while delivering clear ecological returns. Financial analysis shows a net profit of $5,000 after 5 years of operation.

10,000 ha

ARR is a commercially managed investment model. Operations may not require contiguous land but do depend on secure tenure, FPIC, advanced technical planning, operation capacity and competent partners. The break-even point typically occurs within 5 to 7 years, with high initial capital requirements offset by economies of scale, professionalized management, and substantial carbon and timber yields. Financial analysis shows an annual net profit of $950,000 after 10 years of operation.

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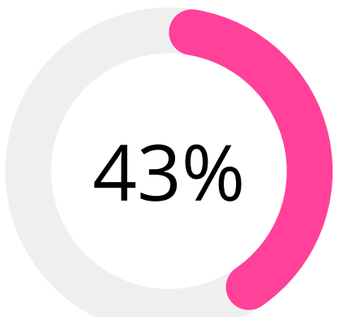
FINANCIAL VIABILITY - THRIVING ENTERPRISES



Long-Term Revenue Streams
ARR generates stable income through carbon credits, sustainable timber, and non-timber forest products. Though returns begin slowly, projects become highly profitable after Year 7–10, especially with rising carbon prices.

Strong Returns at Scale
Industrial-scale ARR projects (10,000 ha) can achieve of ROI levels, with high carbon sequestration volumes and strong investor interest in nature-based carbon credits.

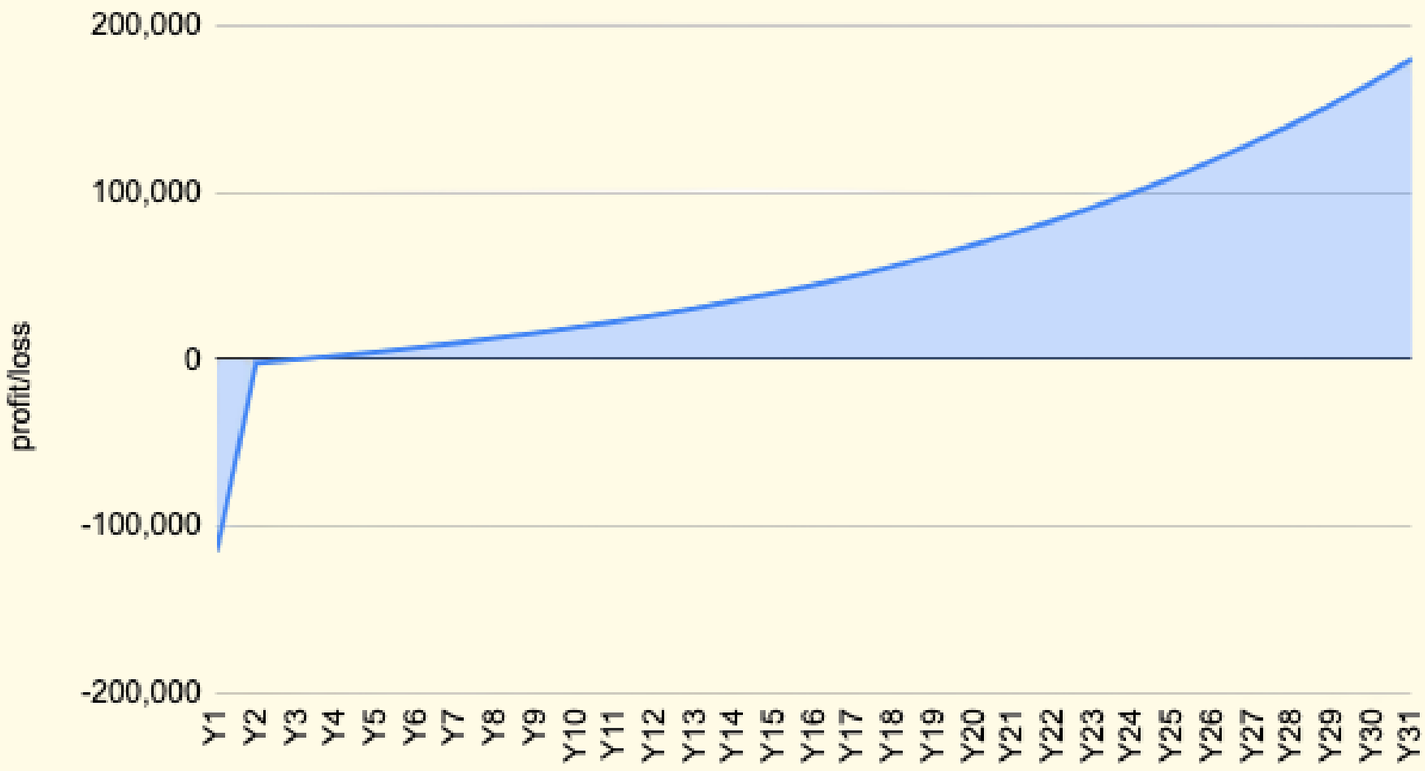
Diverse Income Potential
Beyond carbon, ARR enables income from NTFPs such as honey, medicinal plants, and wild fruits. These alternative revenue sources help bridge the cashflow gap in the early years of implementation.

Viability Across Scales
Smallholder (1 ha), community (100 ha), and industrial (10,000 ha) models each offer viable financial pathways. Cooperative management enhances feasibility and benefit-sharing at the community level.

Predictable Credit Yields
With proper monitoring and species selection, ARR can sequester an average of 15 tCO_2/ha/year — translating into predictable, quantifiable carbon revenues under voluntary and jurisdictional market systems.

Blended Finance Ready
ARR is ideal for blended finance, combining grants, carbon pre-purchases, and private investment. These structures help de-risk early-stage costs and unlock capital for long-term ecosystem returns.

ROI AND PROFIT/LOSS ANALYSIS



Break-even

YEAR 4

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PRELIMINARY GEOSPATIAL ANALYSIS

ARR suitable area

A geospatial suitability screening was conducted across Barué and Vanduzi using RAMO's Multi-Scale ARR Suitability Tool.

The analysis combined satellite imagery, land use data, and carbon methodology filters to classify land into five categories of suitability (from Very Low to Very High) for afforestation, reforestation, and revegetation (ARR).

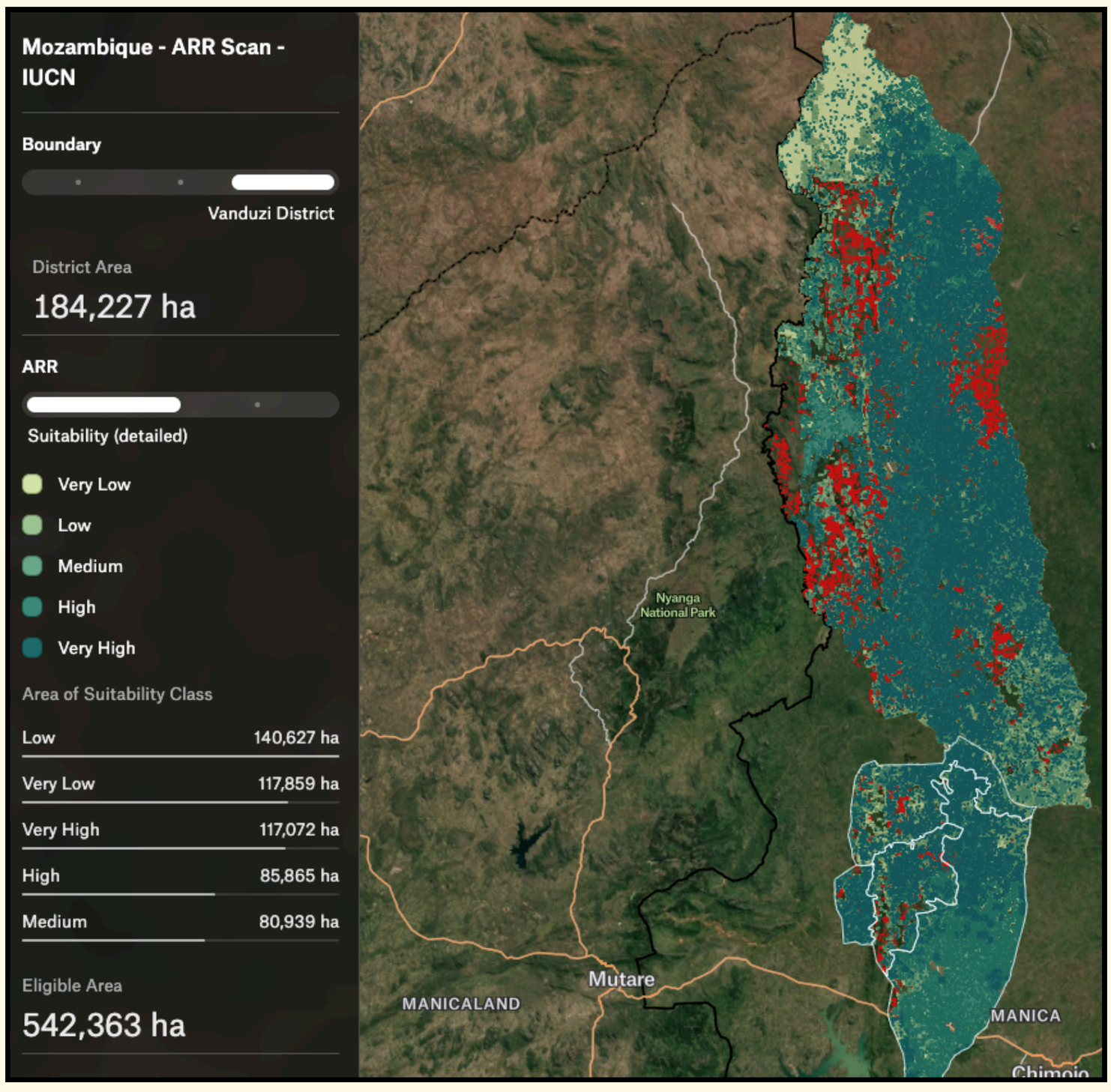
Each hectare was scored based on biophysical factors (e.g., vegetation cover, slope), legal constraints, and carbon potential.

The results identified 542,363 hectares of ARR-eligible land, with over 202,937 ha (37%) rated as High or Very High suitability, highlighting significant opportunity for large-scale, carbon-aligned restoration efforts in Manica Province.

Future analysis is recommended to assess specific project sites in detail and to develop a region-specific AI model.

This would enhance feasibility screening, strengthen alignment with carbon methodologies, and enable ongoing monitoring of ARR activities through locally calibrated remote sensing.

This step is critical for ensuring precision, accountability, and long-term impact.



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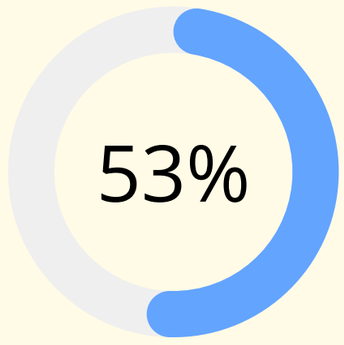
CULTURAL AND SOCIAL ALIGNMENT - COMMUNITY IMPACT

Inclusive Livelihood Opportunities

ARR projects generate employment in nursery work, tree planting, and forest maintenance, activities that particularly engage women and youth. These opportunities create steady income in rural areas with few alternatives.



Respect for Traditional Land Use

When integrated with agroforestry, ARR complements existing land practices rather than displacing them. It supports food security and aligns with traditional ecological knowledge (TEK) on species and resource management.

Community Ownership Through Participation

Participatory planning and benefit-sharing models build trust and ensure equitable access to ARR revenues.

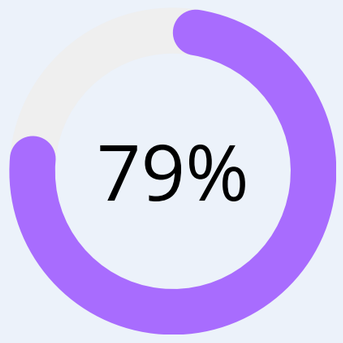
Strengthening NTFP-Based Economies

Communities already value non-timber forest products like honey, fruits, and medicinal plants. ARR strengthens these economies by formalizing access, improving harvesting methods, and linking producers to new markets.

CLIMATE AND NATURE - NATURE'S BALANCE

High Carbon Sequestration

ARR projects have the potential to sequester a lot of tCO_2 per year, positioning Mozambique as a significant contributor to global climate mitigation efforts.



Watershed and Soil Restoration

Tree planting in degraded landscapes improves groundwater recharge, reduces soil erosion, and stabilizes slopes, protecting downstream agriculture and increasing landscape resilience.

Biodiversity Recovery

By restoring native vegetation and supporting wildlife corridors, ARR contributes to species regeneration, habitat connectivity, and the protection of endangered flora and fauna in critical ecosystems.

Climate Risk Buffering

Forested landscapes act as buffers against climate extremes, reducing the risk of flooding, drought, and heatwaves. This enhances climate adaptation capacity at both farm and landscape levels.

Regenerative Land Use

When combined with agroforestry systems, ARR supports sustainable food production, improves microclimates, and regenerates degraded land,creating a foundation for long-term ecological stability.

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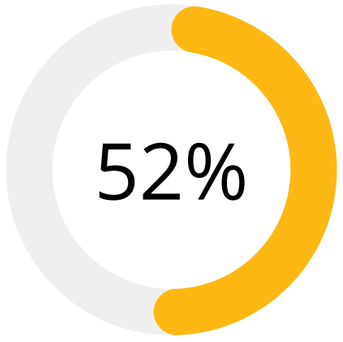
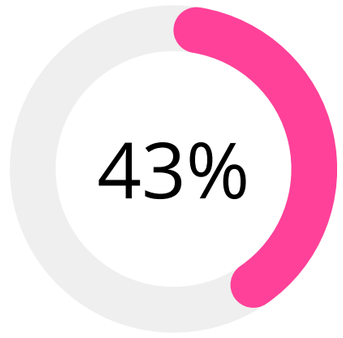
FINAL SCORING PER COMPONENT



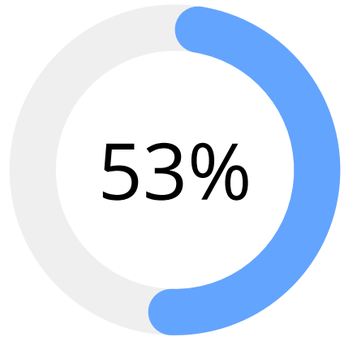
Catalysts for Success

Current conditions are moderately aligned with CERS criteria linked to Policy, Participation, Land Rights, and Institutional Capacity. Improvements are needed.



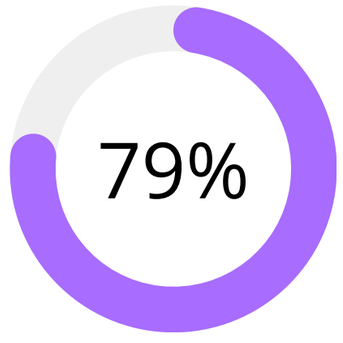
Thriving Enterprises

Current conditions are moderately aligned with CERS criteria linked to Assumptions, ROI, Scenarios, and Break-even. Improvements are needed.



Community Impact

Current conditions are moderately aligned with CERS criteria linked to Assumptions, ROI, Scenarios, and Break-even. Improvements are needed.

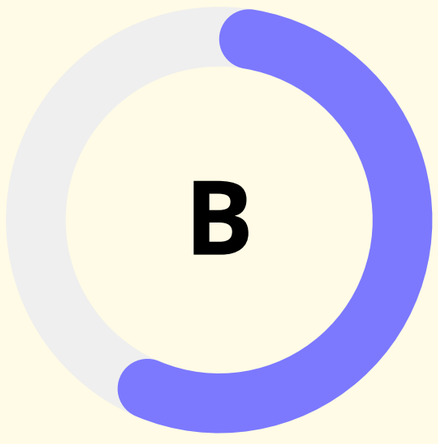


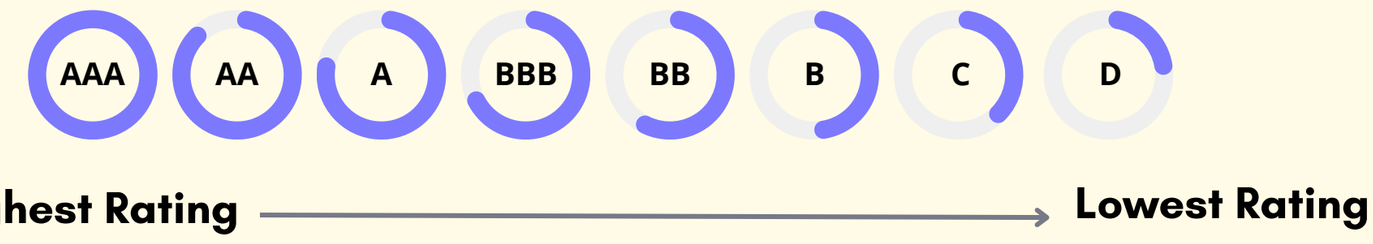
Nature's Balance

Current conditions are well aligned with CERS criteria linked to Biodiversity, Carbon Emissions, Ecosystem, and Soil Health. There is still some room for improvement.

Recommendations for improvement on the next page

FINAL VIABILITY SCORING CONSIDERING NbS and CSA practices





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INVESTMENT RECOMMENDATIONS

- Invest in **community-led natural forest protection** in areas around Macossa and along the Turanhanga River near Piscina, a critical ecosystem and water source for Catandica

- Introduce **incentive-based conservation agreements** to reduce forest degradation and promote natural regrowth.

- Promote **ARR practices** that integrate fruit trees, indigenous species, and firewood alternatives in Chindengue and Vilanova.

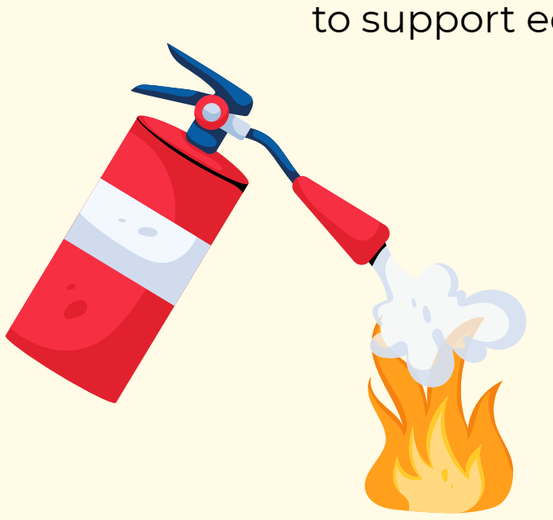
- Use **agroforestry** to meet community needs while restoring tree cover.

- Support **mapping of degraded and regenerating lands** in Macossa and Piscina through drone or satellite tools.

- Build **community understanding of carbon credit potential**, particularly for projects aiming to sell credits in voluntary markets.

- Build **local governance capacity** to manage ARR zones and enforce sustainable practices.

- Formally incorporate Piscina Association into **ARR-focused programming** to support ecosystem preservation.



- Provide **community training** in **fire prevention and control** in Campo 4, where ARR potential is high but uncontrolled burning remains a risk.

- Equip **community forest brigades** with tools and protective gear.

- Facilitate **group DUATs or community land agreements** in **ARR-priority zones** in Nhautsanze and 7 de Abril.

- Link **stewardship to ecosystem service payments** or employment opportunities (e.g., seedling nurseries, monitoring jobs).

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