



How Carbon Sales Transform Rural Water Access in Eritrea

A Community-Led, Circular Model for Sustainable Water Systems

1. Introduction

Across rural Eritrea, broken water points have long forced communities—especially women and girls—to travel long distances in search of safe water. The result is lost time, adverse health impacts and significant socio-economic challenges for households already living in resource-poor conditions.

Vita's Eritrean water-point programme demonstrates a pioneering model that uses carbon finance to repair, maintain, and sustain rural water infrastructure at scale. By rehabilitating non-functioning boreholes and ensuring clean water flows year after year, the programme reduces the need for households to boil water over open fires. This results in substantial carbon savings, which are independently verified and sold as high-quality carbon credits.

These carbon revenues are then reinvested—creating a circular, community-centred development model where water access directly generates the finance required to expand and maintain the system. In Eritrea, this model is already delivering deep, measurable, long-term benefits.

2. Phase 1: Repairing 270 Water Points and Reaching 182,000 People

In the pilot phase (VGIF Phase 1) Vita repaired 270 broken rural water points, restoring reliable clean-water access for approximately 182,000 people. These rehabilitated water points generated several transformational impacts:

2.1 Clean Water Access Restored

Water point functionality dramatically improved health, time savings, and household resilience—especially for women and girls who shoulder the burden of water collection.

2.2 Carbon Emission Reductions

With clean water available locally, households no longer needed to boil water in order to sanitise it using biomass fuel. This reduced pressure on local forests and significantly cut CO₂ emissions. These emissions reductions were:

- measured and monitored
- verified through Gold Standard methodologies
- issued as high-quality carbon credits

2.3 Carbon Revenues Flow Back into the Fund

Once credits were sold, carbon revenues flowed into the **Vita Green Impact Fund (VGIF) Phase 1**, helping to:

- repay concessional investors

- cover programme costs
- generate surplus revenue for reinvestment in Eritrean water points

This created the financial basis for a second, even larger phase of community water-point expansion.

3. Phase 2: Reinvesting Surplus Carbon Profits to Repair 330 More Water Points

A defining principle of the VGIF is that communities who generate the carbon savings become the primary beneficiaries of the profits. In Eritrea, this principle guided the reinvestment strategy.

Through surplus revenues from Phase 1 carbon sales, VGIF financed:

- Repair of an additional 330 water points
- Extending safe water to a further 225,000 people

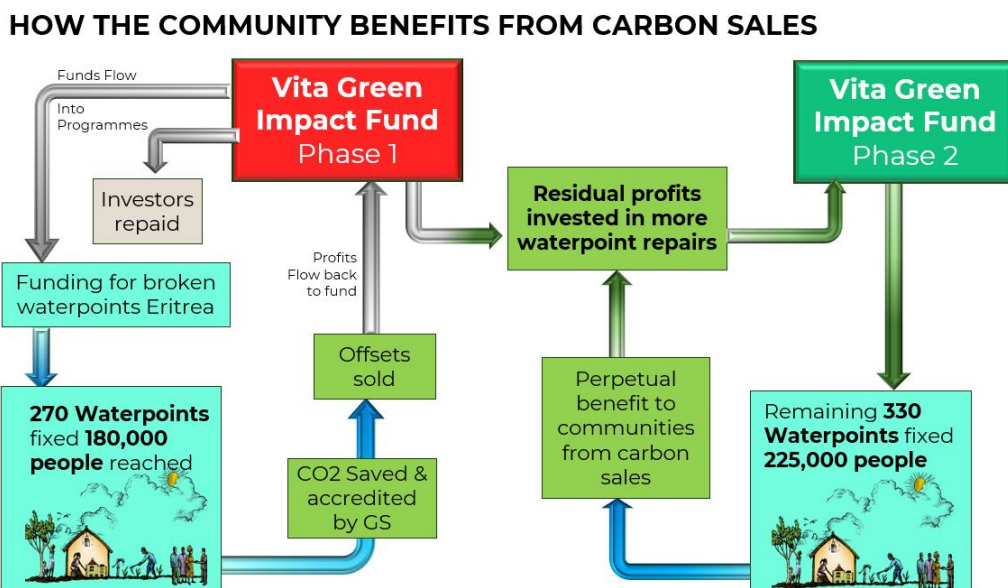
This means that the Eritrean programme now supports 600 water points in total, reaching approximately 405,000 people with reliable, clean water.

3.1 A Perpetual Benefit Model

Carbon revenue does not simply fund one-off repairs—it establishes a long-term, self-sustaining cycle:

1. Water points are repaired.
2. Communities gain safe water access.
3. Households stop boiling water → emissions reduced.
4. Emissions reductions generate carbon credits.
5. Credits are sold → profits return to the fund.
6. Profits pay for more repairs AND long-term maintenance.

Graphic below shows carbon finance flowing from Phase 1 to Phase 2 and sustaining the entire system.



4. Long-Term Maintenance of All 600 Water Points

A critical innovation of VGIF is its commitment not only to repairing water points but also to maintaining them for long-term functionality.

Through the reinvested carbon revenues, the Fund now underwrites:

- routine maintenance of all 600 water points
- provision of tools, training, and spare parts
- capacity building for local water committees
- monitoring and verification systems to ensure high functionality rates

This moves communities away from the common cycle of “rehabilitate → break → abandon,” replacing it with a permanently supported service model.

5. Community Benefits Driven by Carbon Finance

5.1 Health Improvements

Clean water prevents waterborne diseases, reduces medical expenses and improves nutrition and child development outcomes.

5.2 Time Savings and Women’s Empowerment

Women and girls gain hours each day previously spent collecting or treating water—time now redirected toward education, income generation, community participation or simply resting.

5.3 Environmental and Climate Impact

- Less firewood gathering
- Reduced deforestation – less stress on existing forestry creating opportunities to replenish
- Lower household emissions

These environmental benefits are directly converted into verified carbon assets that continue to support communities.

5.4 Local Governance Strengthening

Vita supports community water, sanitation and hygiene committees (WASH), ensuring:

- transparent management of water points
- equitable and inclusive access
- community ownership over maintenance and reporting

This institutional strengthening is central to long-term sustainability.

6. Why Eritrea’s Water Programme Is a Global Model

The Eritrean water-point mechanism stands out globally because it:

- links rural water access with climate finance – brings new money into development

- ensures communities retain the majority of value created
- creates a circular, revenue-generating development model
- proves that carbon finance can sustain essential public services
- expands reach far beyond initial donor capital

The programme demonstrates that when rural communities' actions reduce emissions, they can and should become co-owners of the value generated.

7. Conclusion

By pairing clean-water access with carbon finance, Vita has created a transformative model in Eritrea where:

- communities generate climate benefit
- carbon revenue flows back to them
- water systems expand year after year
- all repaired infrastructure remains maintained
- long-term resilience is built from the ground up

The Eritrean water-point initiative shows that carbon finance, when community-centred, can create perpetual development benefits, scale essential services, and deliver climate justice in practice and not just in principle.

Ends