



Executive Summary

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The Impact Investment Imperative

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Measuring the Impact of the Vita Green Impact Fund

Leaving No-One Behind

Investment Impact

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Appendix 1: Case Studies

Appendix 2: Vita Green Impact Fund Logic Model



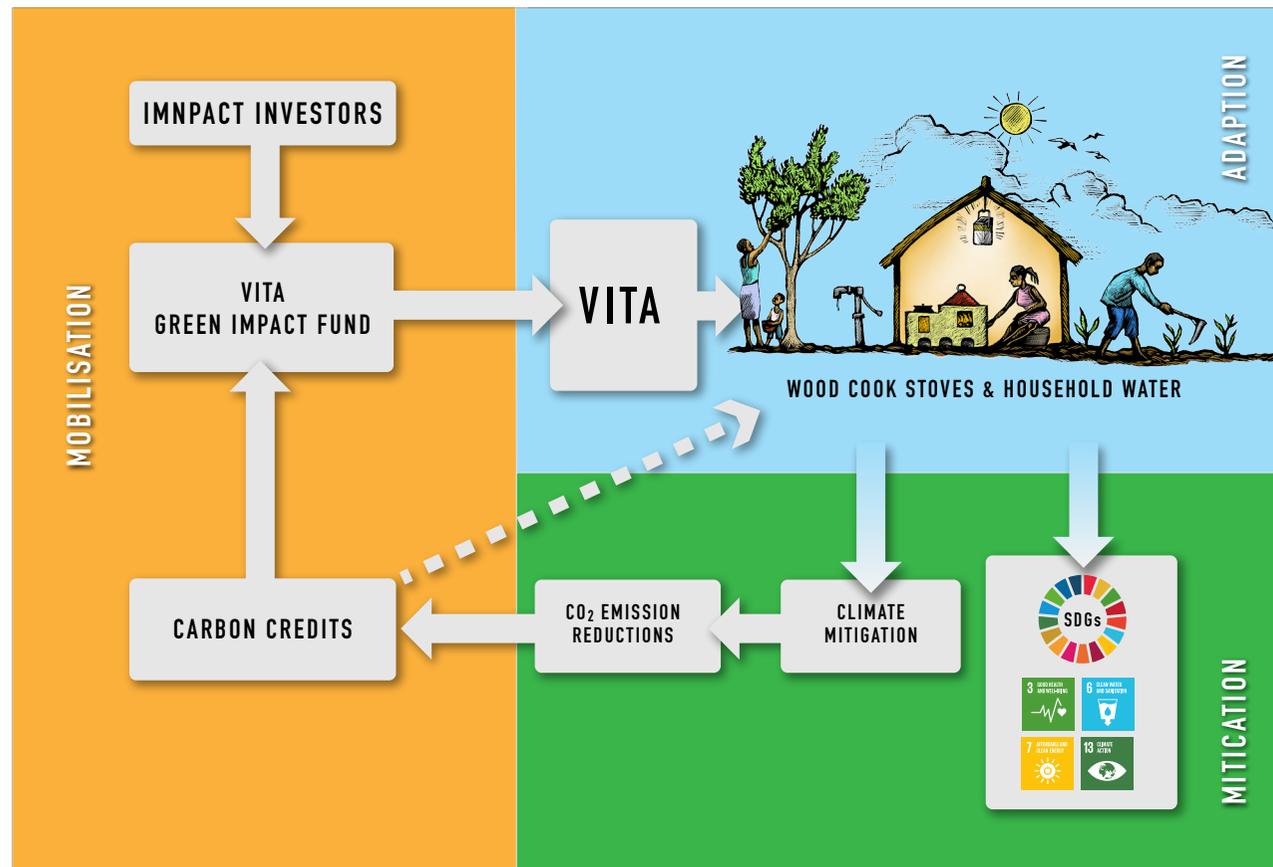
# VITA GREEN IMPACT FUND

## Impact Report 2016 - 2020

# EXECUTIVE SUMMARY

Since 2016 Vita has piloted the five-year Vita Green Impact Fund (VGIF) as a sustainable financing platform for delivering low-carbon, high-impact work in Africa. In this “proof-of-concept” stage, Vita raised a €2 million investment using a blended finance model. The private sector and Irish Aid supported €500,000 in grant finance with €1.5 million raised as loan investment. The €2 million fund was applied over a two-year period to provide sustainable clean water and improved household cooking technology to over 300,000 people in Eritrea and Ethiopia. This programme has generated over two

million tonnes of carbon emissions reductions to date\*, which are accredited and registered with Gold Standard for trading as voluntary carbon offsets. Almost all offsets to date have been contracted for sale and the €1.5 million loan investment is expected to be repaid with interest by 2021 from the carbon sales proceeds. A residual surplus is being retained by Vita for re-investment in the community management of water and improved cookstove projects. This is illustrated in the diagram below.



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\* Vita's carbon offsets are measured and subsequently certified by [The Gold Standard](#), an external and independent international accreditation body using systems and processes laid down by the United Nations



## EXECUTIVE SUMMARY contd/

The Vita Green Impact Fund clearly and emphatically demonstrates that private capital can be leveraged for socially impactful, climate change mitigation measures in communities that are most vulnerable to and least responsible for climate breakdown, while simultaneously delivering a modest financial return on investment and contributing to global reductions in CO2 emissions. During the OECD Peer Review of Ireland's Development Co-operation Policies and Programmes in 2019, the Vita Green Impact Fund was recognized as an example of Irish leadership in innovative blended finance approaches to development funding. Vita was subsequently invited to present at the OECD's Private Financing for Sustainable Development Week \*\*in January 2020.



#### HIGHLIGHTS OF THE FUND'S ACHIEVEMENTS SO FAR INCLUDE:

- Providing access to affordable, sustainable drinking water and improved cooking technology for 311,308 people in Ethiopia and Eritrea
- Achieving verifiable contributions towards eight of the Sustainable Development Goals
- Generating carbon emissions savings of over two million tonnes of CO2 equivalent
- Mobilizing new capital for development by raising €1.5m in loan investments and €0.5m in grants

This impact study outlines the multi-dimensional impact reported at household level, delivered alongside carbon emissions reductions. It further demonstrates how a well-proven, innovative, sustainable financing mechanism can bring non-traditional capital into the climate and development sector and become a game-changer in the climate-financing

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\*\*<https://www.oecd.org/dac/financing-sustainable-development/development-finance-topics/private-finance-for-sustainable-development.htm>



## OBJECTIVES OF THE VITA GREEN IMPACT FUND

The Vita Green Impact Fund's overall objective is to provide rural households with high impact energy and water solutions that mitigate climate change and generate funds for reinvestment in communities, while providing investors with sustainable social, environmental and financial returns.

**Green:** The Fund aimed to support sustainable livelihoods in participating communities, while reducing CO<sub>2</sub> emissions of over two million tonnes<sup>2</sup> over the course of the project

**Impact:** The Fund aimed to deliver supports energy and water solutions to 200,000 people, providing a range of social and economic benefits to households in rural Africa. These benefits are particularly realised by women, who shoulder the burden of collecting sufficient water and fuelwood for their households.

**Fund:** This is a closed-end fund of €2 million – 75% capital as low-interest loans and 25% as grants. Loans are projected to be repaid over a five-year term plus interest. Funds generated through carbon offset sales are being reinvested in the communities, enabling affordability, scalability and universal access.

*Figure 1:  
A girl in Dorze village,  
Gamo Zone, Ethiopia  
enjoys safe water from  
a water point repaired  
under the Fund*



2: Metric tonnes Co<sub>2</sub> equivalent



# THE IMPACT INVESTMENT IMPERATIVE

## GLOBAL CLIMATE CONTEXT

The world is reaching its ecological limits, especially concerning carbon emissions. This requires immediate and decisive action from developed countries to build low-carbon economies and support low-carbon development overseas that will slow down climate breakdown. At a global level, the energy sector faces two key challenges; ensuring the security of energy supplies, while reducing the contribution of growing energy consumption to climate change. Inefficient burning of wood each year is estimated to release over one billion tonnes of CO2 into the atmosphere<sup>3</sup>, suggesting that household energy issues (clean cooking) must be taken into consideration when addressing climate change. Because a significant share of the gasses emitted by burning wood (such as black carbon and methane) have short life spans and higher global warming potentials than CO2, reductions in their emissions could support more rapid climate change mitigation than would occur solely from reductions in CO2.<sup>4</sup>

Developing countries continue to face enormous challenges in mobilising financial resources for the necessary climate change adaptation and mitigation measures. Cutting trees to provide fuelwood for cooking and boiling unsafe water is the biggest source of CO2 emissions in Africa. With adequate financing, African countries can bypass the fossil fuel-driven development followed by the “developed” world. Supporting resource-poor communities in rural Africa to access climate-smart, sustainably managed energy and water solutions can strengthen household resilience and deliver a range of health, social and economic benefits at household level, while mitigating environmental and climate damage.

## THE HORN OF AFRICA

The Global Adaptation Index developed by the University of Notre Dame places Ethiopia and Eritrea among the most vulnerable in the world to the effects of climate change, and among the least equipped to improve resilience<sup>5</sup>. Eritrea and

Ethiopia are also among the lowest contributors per capita to global heating; thus, those least responsible for climate change are most exposed to, and least equipped to mitigate, its negative effects.

The Vita Green Impact Fund focused on rural communities in Ethiopia and Eritrea, where poor access to water and fuelwood for cooking presents multi-dimensional challenges to households already vulnerable to the effects of climate change. Energy needs of growing populations have contributed to unsustainable rates of deforestation, with both countries observing dramatic declines in forest cover over recent decades – this has contributed to fuel scarcity for rural households, while undermining the fragile natural resource base (soils, water, trees) upon which rural livelihoods depend. Failure of development actors to invest in local maintenance and management capacities has seen many rural water points fall into disrepair; recent studies have shown up to 35% of rural water points in Ethiopia to be broken<sup>6</sup>. This forces communities to walk further each day to collect water, often from unsafe sources, increasing their exposure to disease and infection.

These impacts are experienced most acutely by the women in the home, to which the burden of collecting sufficient water and fuel, and caring for the sick, customarily falls. Women and girls spend an estimated 200 million hours per day worldwide, on water collection alone<sup>7</sup>. Addressing the triple burden of the opportunity cost of fuel and water collection, exposure to health risks and continued depletion of natural capital – through delivering improved access to water and energy – strengthens the resilience of these communities to climate change, in which women are the primary beneficiaries.

3: Household Cookstoves; A new look at an Old Problem, World Bank 2011

4: Global Atmospheric Impacts of Residential Fuels: Bond et al, 2004

5: GAIN-Index 2019, University of Notre Dame Global Adaptation Initiative

6: Fleming, Cronk et al, Improving Monitoring and Water Point Functionality in Rural Ethiopia, 2018

7: UNICEF 2018



# THE SUSTAINABLE DEVELOPMENT GOALS AND THE VITA GREEN IMPACT FUND

The historic adoption of the UN Sustainable Development Agenda (2015), and the Paris Agreement (2015) by the Conference of the Parties (COP) to the UN Framework Convention on Climate Change (UNFCCC) has stimulated international focus on the need for collective action to address climate change and its effects.

The Impact Framework for the Vita Green Impact Fund was embedded in the global Sustainable Development Goals included in the 2030 Agenda for Sustainable Development, adopted by all United Nations Members States in 2015.

The seventeen **Sustainable Development Goals (SDGs)** build on decades of work by the UN and member countries, including building on the achievements and lessons of the previous eight Millennium Development Goals (MDGs). This includes the necessity of **innovative climate financing mechanisms** (SDG 13)<sup>8</sup>.

The Vita Green Impact Fund contributes directly or indirectly to specific targets under eight of these Goals. The data included in the table below is derived from an independent accreditation agency (Gold Standard) and independent monitoring reports.

Figure 2:  
Selected SDG Targets  
and VGIF contribution

SDG	SDG TARGET	VGIF RESULTS
	<b>1.4</b> By 2030, ensure that all men and women, in particular the poor and vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology	<b>311,308</b> people in Ethiopia and Eritrea with improved access to basic services (water or energy)
	<b>3.9</b> By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contaminants	Reduced incidence of water borne disease among the target population of <b>219,485</b> Reduction in indoor air pollution for <b>91,823</b> people through reduced household fuelwood consumption
	<b>5.4</b> Recognize and value unpaid and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and family as nationally appropriate	Reduced burden of unpaid labour and opportunity cost of ensuring water and energy security for women. An estimated savings of women's time of <b>16,188, 120</b> hours per annum. <b>50%</b> reduction in weekly hours spent by women collecting water or fuelwood
	<b>6.1</b> By 2030, achieve universal and equitable access to safe and affordable drinking water for all	<b>219,485</b> people with improved access to safe water collectable within a 30- minute round trip

8: The Agenda 2030 UN Sustainable Development Goals (SDG 13) calls upon the international community to mobilize \$100 billion through all sources to address the mitigation needs of those countries most vulnerable to the effects of Climate Change. Private Sector Investors will need to provide the bulk of this capitalization, in a sector characterized by unfavourable risk/return profiles, either real or perceived.



THE SUSTAINABLE DEVELOPMENT GOALS AND THE VITA GREEN IMPACT FUND contd/

SDG	SDG TARGET	VGIF RESULTS
 <p>6 CLEAN WATER AND SANITATION</p>	<p><b>6.2</b> By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations</p>	<p><b>604 million</b> litres of safe water provided per annum for all household needs</p>
	<p><b>6.B</b> Support and strengthen the participation of local communities in improving water and sanitation management</p>	<p>Water User Associations and Management Committees established, equipped and functional in <b>406</b> communities</p>
 <p>7 AFFORDABLE AND CLEAN ENERGY</p>	<p><b>7.1</b> By 2030, ensure universal access to affordable, reliable and modern energy services</p>	<p><b>91,823</b> people accessing improved cooking technology which is at least <b>50% more energy efficient</b> than traditional models</p>
	<p><b>7.3</b> By 2030, double the global rate of improvement in energy efficiency</p>	
 <p>10 REDUCED INEQUALITIES</p>	<p><b>10.2</b> By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status</p>	<p><b>406</b> communities (219,485 people) empowered to sustainably manage and maintain water infrastructure</p> <p>Innovative sustainable financing model enables the provision of basic services to the most vulnerable households at below-cost</p>
 <p>13 CLIMATE ACTION</p>	<p><b>13.3</b> Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning</p>	<p>Verified emissions savings of 2 million tonnes CO2 equivalent to date and currently saving over 500,000 tonnes per annum.</p>
	<p><b>13.A.1</b> The mobilized amount of US\$ per year between 2020 and 2025 accountable towards the \$100 billion commitment.</p>	<p><b>€2 million</b> of new capital raised through an innovative social impact investment platform</p> <p>Emissions savings of <b>40.5</b> tonnes of CO2 equivalent per annum for every €100 invested</p>
 <p>15 LIFE ON LAND</p>	<p><b>15.2</b> By 2030, promote the implementation of sustainable management of all types of forest, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation global</p>	<p><b>539,077</b> tonnes of fuelwood saved per annum</p>



# MEASURING THE IMPACT OF THE VITA GREEN IMPACT FUND

Figure 3:  
Vita Green Impact Fund  
2015 - 2020



A comprehensive results management framework is applied to the Vita Green Impact Fund, in order to:

- **Quantify** the Fund's contributions to climate security and sustainable development,
- Ensure **eligibility criteria is fulfilled** for the issuing of carbon credits on voluntary carbon markets
- Continuously **strengthen programme impact** through rigorous monitoring, evaluation, reflection and learning, while seeking to better understand and track the catalytic role of water and energy security in the development of rural communities. Learnings, best practices and innovation are both shared and studied by Vita and peer organizations in relevant global, regional and national fora.

## METHODOLOGY

The primary methodology adopted in impact measurement is the **Gold Standard**. The Gold Standard<sup>9</sup>, initiated by a group of NGOs in 2003, is supported by over 80 Civil Society Groups around the world, alongside the United Nations and many national governments and corporations. It is the most rigorous certification standard for carbon offset projects globally, with eligibility for certification requiring the delivery of substantial social benefits in addition to carbon emission reductions. Support in the independent verification process is provided by Co2Balance, a leading global player in the voluntary

carbon market specializing in project design and accreditation services. The Gold Standard Project Cycle is a comprehensive process under which baseline study, stakeholder engagement, monitoring and review precedes impact quantification, including the issuing of carbon credits.

The **reduction of carbon emissions** delivered by the Vita Green Impact Fund is centred around the displacement of biomass fuels in cooking or boiling water. Improved cook stoves directly reduce the amount of fuel needed through improved energy efficiency, while providing safe water removes the need to boil water using biomass as a means of purification. Baseline studies determine water, fuel and stove use habits of the targeted community; in safe water projects, water boiling tests are conducted to determine how much wood is used to purify water, and borehole user numbers are assessed in collaboration with the relevant local government authority. Kitchen Performance Tests are conducted for improved cook stoves projects, to determine fuelwood quantities used pre-project on traditional or three stone stoves. This data is assessed against annual project monitoring to determine carbon emissions savings in each community. In summary, carbon emissions reductions are calculated by subtracting carbon emissions (*fuelwood used for cooking or boiling water for purification*) when the water or cookstove project is in implementation, from the pre-project carbon emissions measured at baseline.



9: <https://www.goldstandard.org/>



## MEASURING THE IMPACT OF THE VITA GREEN IMPACT FUND contd/

Besides continuous monitoring and impact evaluation aligned to Gold Standard accreditation, the Vita Green Impact Fund is integrated into Vita's own monitoring, evaluation and learning processes. The financial support and strong partnership with Irish Aid is a key enabler of the Fund. As an Irish Aid programme partner, these systems must demonstrate alignment to the guidance and standards provided by the Irish Aid Civil Society Unit (Department of Foreign Affairs and Trade). Vita's quantitative indicators capturing the social and environmental impact of the Fund are embedded in Vita's results management frameworks, with progress against desired outcomes tracked against baseline values established in 2017. This data is augmented by focus group discussions and interviews with key stakeholders and beneficiaries on an annual basis.

### IMPACT

The impact of the Fund as aligned to eight selected Sustainable Development Goals is described below in more detail, drawing on quantitative and qualitative data from across the monitoring and evaluation processes.



### Household Economic Impact

Improved water and energy security can have a positive impact on household finances in a number of ways. Increased discretionary time released from the weekly time burden of water and fuelwood collection can be allocated to income-generating activities, reduced costs associated with water-related disease and respiratory infections (both in terms of treatment expenditure and lost days of productivity), and reduced household expenditure on fuel. These benefits were reported by participants in Focus Group Discussions conducted by Vita in Gamo Zone, Ethiopia, in communities where water points had been repaired through the Fund.

Research in Southern Ethiopia led by the University of Hohenheim in Stuttgart identified a considerable opportunity cost of energy source collection<sup>10</sup> time, by estimating the marginal productivity of labour in farm activities of household members who performed the task of collection. As the Vita Green Impact Fund expands to new districts in Ethiopia, Vita will seek to gain a more comprehensive understanding of water and energy security within the rural household economy.



### Health and well being

The primary health benefit related to increased access to clean, safe water is a reduction in water borne diseases, such as diarrhoea and other gastro-intestinal complaints. Diarrhoea is the second leading cause of death of children under five globally<sup>11</sup>, and remains a major cause of morbidity and mortality among young children in both Ethiopia and Eritrea. Unsafe water, poor sanitation and inadequate personal hygiene are linked to over 90% of cases. Access to safe water for domestic consumption is critical, in order for communities to reduce their vulnerability to water-borne disease and infection. Access to basic water services in both Ethiopia and Eritrea are among the lowest in the world, each reporting rates of among the five least-well served countries globally<sup>12</sup>.

A sample of communities in Ethiopia where water points had been rehabilitated under the fund, and that were previously relying on unsafe and potentially contaminated water sources, identified a dramatic reduction in stomach complaints compared to the baseline scenario<sup>13</sup> - the frequency of gastrointestinal complaints reported by community members was reduced to negligible levels once safe water was available and accessible.

10: Household Energy Economics in Rural Ethiopia: A cost-benefit analysis of biogas energy, Gawwuya et al, 2012

11: <https://www.jhsph.edu/ivac/wp-content/uploads/2018/04/IVAC-2014-Pneumonia-Diarrhea-Progress-Report.pdf>

12: 2020 Human Development Index, UNDP

13: Co2balance report: ETHIOPIA SAFE WATER PROJECT IMPACT REPORT: VGIF 1



## MEASURING THE IMPACT OF THE VITA GREEN IMPACT FUND contd/

It is noted that limitations apply to this indicator (Figure 4), as the survey question used invited the respondents to draw their own conclusions on causation, potentially prejudicing the response. Upon review, Vita has adjusted the survey tools for future studies and impact assessments. Vita will shortly embark on a detailed study over three years of communities where water points will be rehabilitated under the Fund in Amhara Region, Ethiopia, to gain a more comprehensive understanding of the relationship between access to safe water, household hygiene and sanitation, and health outcomes.

In Eritrea, Vita examined overall reported incidence of water borne disease in the two districts in which water points were rehabilitated under VGIF since 2017; Zoba Debub (87 water points repaired) and Zoba Anseba (42 water points repaired). In both districts, but most dramatically in Zoba Anseba, a significant reduction was recorded in the proportion of households reporting any incidence of water-borne disease in the previous six months – from 12% to less than 1%. Reduced incidence of water-borne disease contributes to reduced school absence, reduced healthcare-related costs and less labour hours lost to sickness – the latter is particularly important in Eritrea, where lack of available labour at critical times in the agricultural calendar is among the primary constraints on crop production.

Figure 5:  
% HH reporting stomach complaints (Co2 balance Ethiopia VGIF Water Impact Report)

**FIG:5** Reported frequency of stomach related illness 2017, % households (Ethiopia)

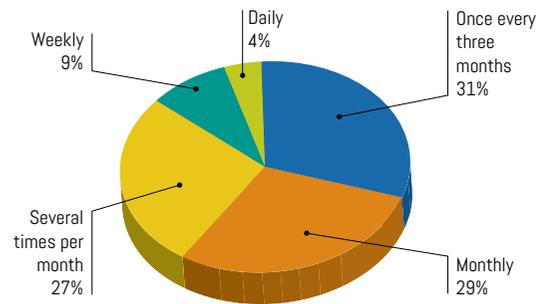
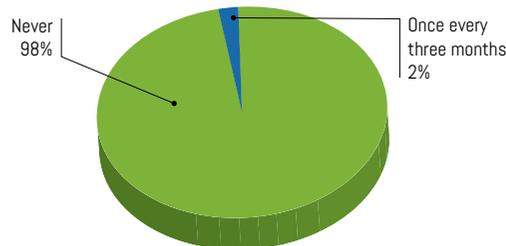
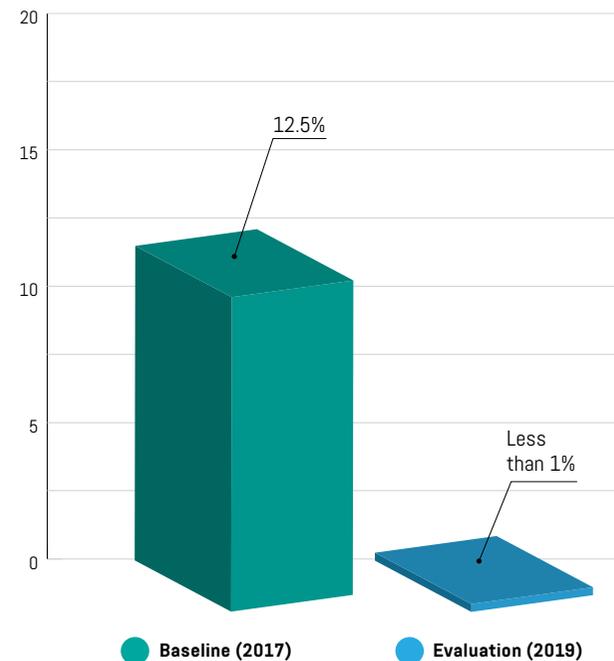


Figure 6:  
% of households reporting incidence of water related disease in previous 6 months, Zoba Anseba, Eritrea

**Reported frequency of stomach related illness 2019, % households (Ethiopia)**



**FIG:6** % of households reporting incidence of water-borne disease in previous six months (Zoba Anseba, Eritrea)



## MEASURING THE IMPACT OF THE VITA GREEN IMPACT FUND contd/

Reduced vulnerability to water borne diseases and infection is not the only health benefit associated with improved access to safe water. The reduction in women having to travel long distances also proved very beneficial. Women participating in focus group discussions in targeted communities in Ethiopia<sup>14</sup> and Eritrea<sup>15</sup> listed reductions in a range of health complaints experienced by women before the rehabilitation of water points. These included; **back pain, muscle strain, blisters and podiatric issues, injury linked to accidents and falls, depression and anxiety**. Participants also identified a reduction in health complaints associated with indoor smoke inhalation, such as **headache, eye irritation and respiratory issues**, due to no longer needing to burn fuelwood to purify water collected from unprotected sources.



**Gender equality**

In rural Ethiopia and Eritrea, the daily task of collecting sufficient water and firewood for the household largely falls to women and girls, presenting a **Considerable burden on their time, energy and health**. The Vita Green Impact Fund, by supporting improved access to safe water and energy efficient cooking technology, seeks to relieve this burden and opportunity cost largely shouldered by rural women and girls. The fund's impact in this sphere aligns to targets under Sustainable Development Goal 5, including enabling the reduction in the proportion of time spent on unpaid domestic work (5.4) and supporting women's access to natural resources (5.A).

In December 2019, as part of a wider evaluation of Vita's programmes in Ethiopia, changes in weekly "discretionary time" for households were assessed and compared with the baseline figure recorded in 2017. This exercise identified

**considerable increases in time reallocated** among women in districts where the Vita Green Impact Fund has been supporting communities to access clean water and more fuel-efficient cooking technology. This compares to only a negligible increase in discretionary time of female household members recorded over the same period in those districts in which Vita had not implemented any activities aimed at strengthening water and energy security.

**FIG:7** Discretionary time of female household members, est. hours per week (Ethiopia)

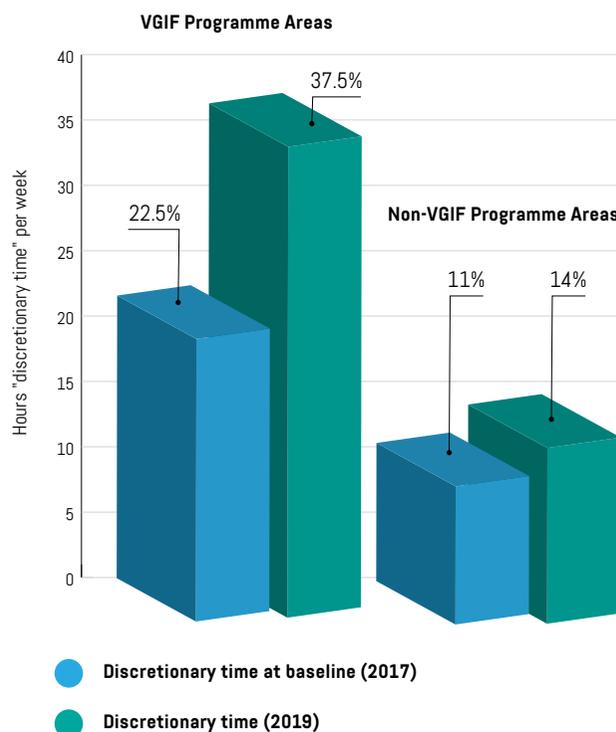


Figure 7: Saved time of women, measured by additional weekly hours of female household members, by VGIF and non-VGIF Vita Programme areas (Ethiopia)<sup>16</sup>

14: Vita Ethiopia Water Impact Qualitative Study 2019

15: Hand Pump Repair Programme Impact Report, Vita Eritrea, 2017

16: VGIF areas applies to average result from Arba Minch Zuria and Mirab Abaya Districts, Non-VGIF applies to Vita areas of operation in South Gonder Zone, Amhara Region

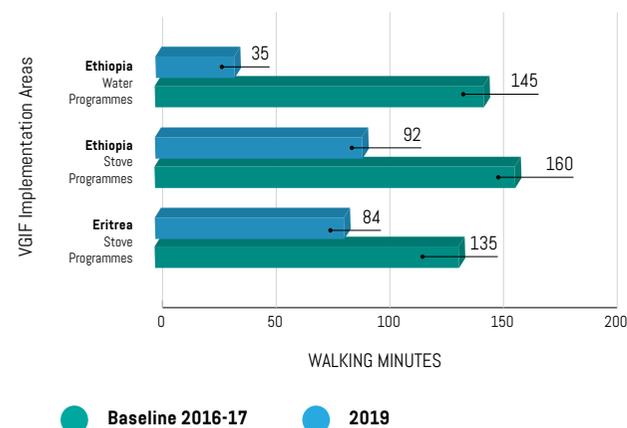


## MEASURING THE IMPACT OF THE VITA GREEN IMPACT FUND contd/

Figure 8:  
Average fuelwood collection times per week, walking minutes

In communities where VGIF has supported water and improved cookstove programmes since 2017, women were previously travelling long distances through often arduous terrain, to collect sufficient water and fuelwood for their households – **often a round trip of several hours**. The fund addresses the burden of collecting fuelwood through both energy and water components; access to safe water within a 30-minute round trip **removes the need** to burn fuelwood to purify water collected from unprotected sources, while the use of energy efficient cookstove designs such as the *mirt* (Ethiopia) and *adhanet* (Eritrea) reduce household fuelwood consumption by over 50% when compared to the traditional models used in each context.

**FIG:8** Average fuelwood collection times, per week



to developing business activities such as retail to **diversify income streams** for themselves and their households, while others allocated additional time to care for their family and other domestic tasks. While much of the increased spare time was allocated to economic and reproductive roles, the impact on quality of life was emphasised by women in all locations – they had increased time to relax, socialise and **bond with their family and community**. The allocation of increased discretionary time resulting from improved water and energy security is a targeted area for further learning by Vita over the next two years.

Another sphere of impact identified by focus group discussion participants was **increased school attendance for girls** – many girls of school-going age share the burden of water collection and arrive in school late or exhausted after collecting water in the mornings. Furthermore, water borne diseases and stomach upsets contribute to absences from school. Interviews conducted with school principals in intervention catchment areas in Eritrea also illustrated the impact of improved access to safe water on school attendances. At one school in Berik Sub-Zone, which accommodated pupils both from villages where pumps had been rehabilitated and from villages where repairs were pending, the **absence rates** of children from villages with an improved water source were almost 50% lower than other villages<sup>17</sup>.



### Clean Water and Sanitation

In focus group discussions conducted with community members in villages in Gamo Zone, Ethiopia where water points had been rehabilitated under VGIF, women and girls described the various ways they have utilised increased discretionary time provided by no longer walking up to several hours each day to fetch water. Some women were able to allocate more time

In Eritrea, 180,292 people and in Ethiopia, 39,193 are **accessing safe water** collectable within a 30-minute round trip due to water point rehabilitation implemented through the Fund. Previous to the intervention, these communities were relying on unprotected, potentially contaminated wells and unsafe, seasonal sources such as rivers and streams.

17: Hand Pump Repair Programme Impact Report, Vita Eritrea, 2017

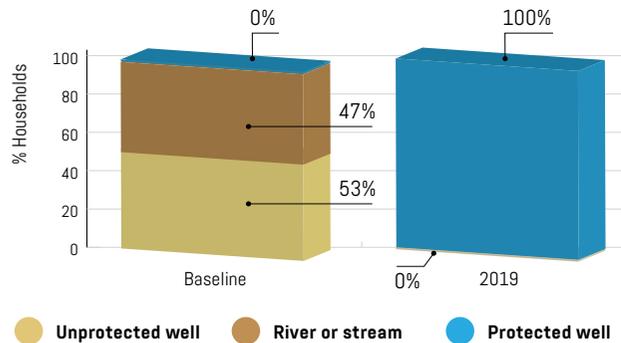


## MEASURING THE IMPACT OF THE VITA GREEN IMPACT FUND contd/

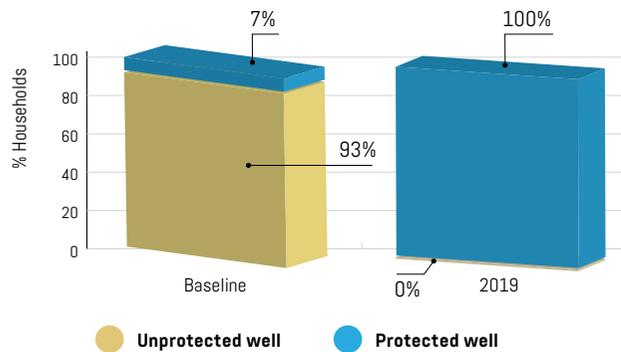
Figure 9:  
Primary water source accessed by households, by type/country

Figure 10:  
Average Daily Safe Water Consumption, Litres/Person/Day

**FIG: 9 Primary water source accessed by type (Eritrea)**

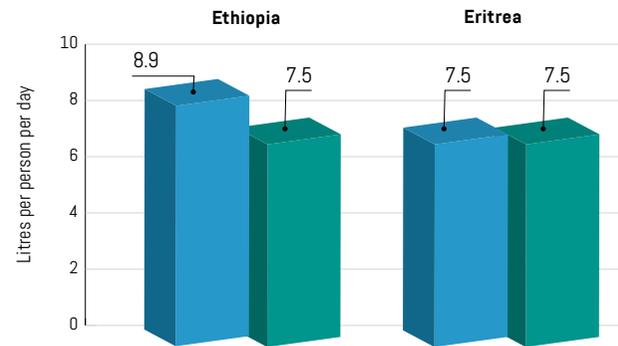


**Primary water source accessed by type (Ethiopia)**



All repaired water points are subject to annual water quality tests (physiochemical and bacteriological) to validate that water quality meets national and World Health Organization standards and is fit for human consumption. Any necessary treatment needed during the year is then carried out by the relevant national authorities, as formalized in Memorandums of Understanding between VGIF, the community and competent local government line ministry.

**FIG:10 Average Daily Water Consumption, VGIF Implementation areas**



- Average Daily Safe Water Consumption (VGIF supported water points)
- World Health Organisation Standard

The **World Health Organisation** recommends a minimum of 7.5 litres of safe water per capita per day will meet the requirements of most people under most conditions. A study of daily usage at 83 water points repaired between June and December 2017 in Gamo Zone, Ethiopia and Zoba Anseba, Eritrea, indicates that community members in villages where VGIF has supported water point rehabilitation are now accessing sufficient safe water per day to meet this international standard<sup>18</sup>.



### Access to clean energy

The Vita Green Impact Fund has supported access to improved fuel-efficient cooking technology for 91,823 people, including 31,405 people in Chencha, Mirab Abaya and Arba Minch Zuria (districts) in Gamo Zone, Southern Ethiopia, since 2017.

18: Calculated from Co2 balance reports for Mirab Abaya, Chencha and Zoba Anseba (2019)



## MEASURING THE IMPACT OF THE VITA GREEN IMPACT FUND contd/

From a baseline of under 15% of households utilising improved, energy efficient designs in 2017, uptake and consistent use of the *mirt* stove, designed to accommodate the local staple flat bread of *injera*, is now as high as 87% of households in Arba Minch Zuria districts. A **dramatic increase in household improved cookstove use** was observed in all three targeted districts between 2017 and 2019. The lack of change in improved cook stove use during the same period recorded in Vita programme areas where VGIF is not supporting improved cookstove programmes suggests the relative impact of the Fund's interventions in this area (see Figure 10 below). In Zoba Anseba, Eritrea, the Fund has supported access to the *adhanet* stove, an energy-efficient modification of a traditional design, for 16421 people.



### Reduced Inequalities

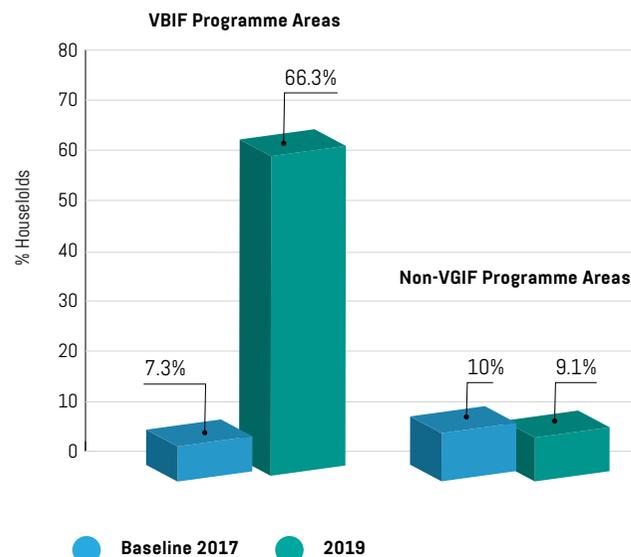
The innovative funding mechanism deployed by the fund, combined with a community-led and managed service delivery model, ensures that the most marginalized members of the community can be reached and provided with access to basic services at below-cost. This is explained in more detail in Section 5. Focus group discussions conducted by Vita in communities where broken water points had been repaired under the fund also identified several additional social benefits, demonstrating the **catalytic effect** that access to basic services can play in the wider life and development of a community.

A benefit of improved access to safe water, repeatedly emphasised by focus group discussion participants in Ethiopia, was the increased opportunity for **strengthening social bonds** within their community provided by the newly rehabilitated infrastructure. This included the availability of additional discretionary time and enjoying the key traditional social function performed by the village water point.

Water User Association Committees, responsible for managing use, maintenance and upkeep of the repaired water infrastructure, have in some cases used their **influence and social capital to mobilize their communities** towards other common goals, such as the paving of roads. Others have established codes of conduct to be observed among water point users to encourage positive social behaviour; for example, in one village in Chench, Ethiopia, the Water User Association Committee imposes penalties on households sending small children to collect water when alternatives are available.

Figure 11:  
Improved Cookstove adoption by  
woreda (district), Ethiopia (Vita  
Programme Areas)<sup>19</sup>

**FIG:11** Use of Improved Cookstoves, % of households (Ethiopia)



<sup>19</sup>: Calculated from average results for all 3 VGIF districts in Gamo Zone, Ethiopia (Arba Minch Zuria, Mirab Abeya, Chench)



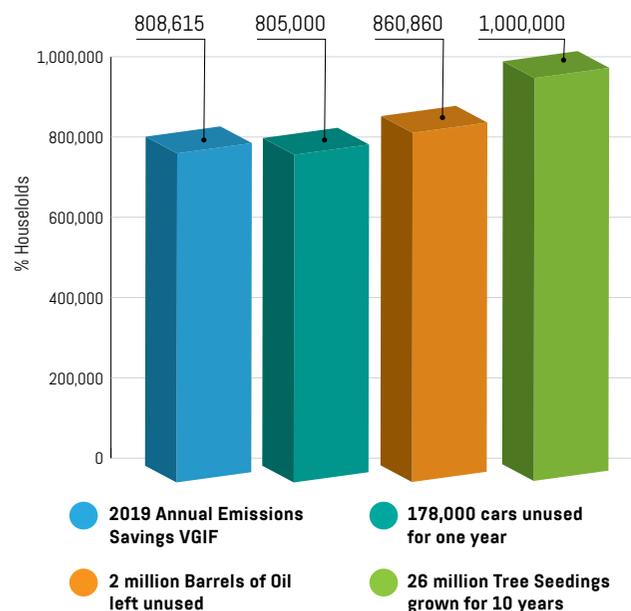
## MEASURING THE IMPACT OF THE VITA GREEN IMPACT FUND contd/

Having sufficient water for personal and household hygiene is a critical factor in helping to ensure that improved access to safe water contributes to better health outcomes. However, community members also emphasised the importance of **maintaining a clean and neat appearance**, an important component of dignity and self-confidence for many – particularly for children attending school. This has been enabled both by no longer having to travel long distances in the bush to collect water each day, and accessing sufficient water to support all households needs, including washing and cleaning.



**Climate Action and protection of natural resources**

**FIG:12** Emissions Reductions per annum, all categories



### TOTAL EMISSIONS REDUCTIONS

The total annual emissions savings of the Vita Green Impact Fund in 2019 alone amounted to 808,615 tonnes of CO<sub>2</sub> equivalent. Total emissions savings generated by the Fund during the reporting period amount to over 2 million tonnes of CO<sub>2</sub>e. The table below compares the annual emissions savings of the Fund to other quantified examples of carbon emissions savings for scale.

### A NEW APPROACH TO SUSTAINABLE FINANCING FOR CLIMATE ACTION

The Vita Green Impact Fund seeks not only to provide sustainable, socially impactful, climate-smart approaches to household water security and energy for cooking – the Fund represents an **innovative blended finance model** that ensures affordability at household level, enables potential scaling and delivers a triple bottom line return to investors. A key objective of the Fund is to attract new capital into the development sector via the development and proof of concept of an innovative social impact investment platform. To this end, the Fund has been successful to date, demonstrating the ability of social impact investors to make a modest return from investing in climate action in Africa. **This is new capital – not diverted philanthropy.**

Proving the effectiveness of this model will have financial impacts beyond the Vita Green Impact Fund, already evidenced by Cantor Fitzgerald entering a partnership with Vita for a new €20m+ fund. The financial innovation at the centre of the Fund has been recognized internationally, with Vita CEO John Weakliam presenting to the OECD Conference, “Private Finance for Sustainable Development” in 2020. Such exposure has already led to discussions with other international organizations keen to explore this proven, disruptive mechanism to mobilize capital. This is a critical contribution of the Fund to Agenda 2030 (Sustainable Development Goal 13), which challenges the international community to finance meaningful mitigation actions in developing countries.

Figure 12:  
Emissions Reductions per annum from ICS and Safe Water Programmes, compared to equivalent values



# MEASURING THE IMPACT OF THE VITA GREEN IMPACT FUND contd/

Figure 13: Reductions in average household fuelwood/biomass consumption, improved cookstove programme<sup>22</sup>



Figure 14: Women in Himbrti Village, Maekel Region, Eritrea participate in the construction of the adhanet stove, a adaptation of a traditional stove model used throughout Eritrea that offers greater energy efficiency and ease of use

The agreement identifies that \$100 billion in public and private resources will need to be raised each year from 2020 to finance projects that enable countries to adapt to the impacts of climate change (rise in sea level, droughts, etc.) or reduce greenhouse gas emissions. The agreement also aims to strengthen the ability of countries to deal with the impacts of climate change, through appropriate financial flows, a new technology framework and an enhanced capacity building framework.



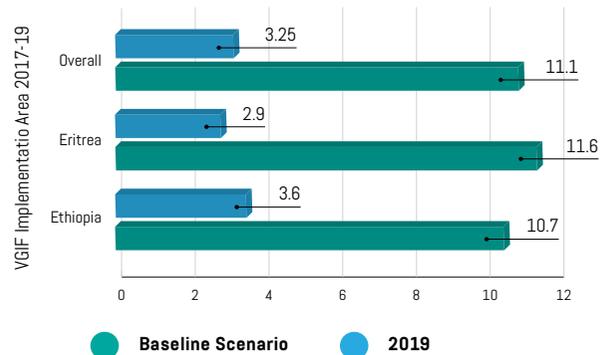
### Reduced household demand for fuelwood

The VGIF enables reductions in carbon emissions by supporting reduced household fuelwood and biomass consumption in **two ways**: (a) adoption and consistent use of improved cooking technologies that are more energy-efficient and (b) ensuring sustainable access to safe water by removing the need to burn fuelwood to boil water collected from unsafe sources to purify before consumption. Protection and sustainable management of forest resources are critical in semi-arid, heavily degraded areas such as the Eritrean Highlands, where advancing desertification undermines the natural resource base upon which rural livelihoods depend. As outlined in SDG 13, forest resources play a critical role in the fight against climate change and reducing vulnerabilities of the rural economy.

The energy-efficiency of improved, fuel efficient cookstoves is assessed through annual *kitchen performance* tests to determine average daily fuelwood consumption and compared with the baseline scenario. The cooking technologies adopted in Eritrea and Ethiopia are selected not only for their energy efficiency, but also for their **capacity to satisfy other critical criteria** to ensure wide uptake and consistent use

over time – most significantly, to accommodate the respective local traditions, aesthetics and food preferences. Therefore, energy savings are not uniform between the designs adopted in each country. Kitchen performance tests<sup>20</sup> conducted in communities where improved cooking technology has been adopted under the fund indicate fuel efficiency savings of between 40-60% when compared with traditional, “three-stone” open flame stove models<sup>21</sup>.

FIG:13 Reductions in average household fuelwood and biomass consumption (Improved Cookstoves Programmes). Kg per household per day



In communities where the VGIF has supported the **repair of broken down water points**, data on household fuelwood consumption for water boiling purposes was calculated at baseline. This figure is attained by surveying water purification methods deployed by households, based on the assumption that all water collected for domestic consumption from unsafe sources would require purification by boiling unless other means were available<sup>23</sup>. This allows savings in annual fuelwood consumption per person (and consequent reductions in carbon emissions) to be calculated.

20: [https://www.goldstandard.org/sites/default/files/documents/ics\\_methodology\\_guidebook\\_v1.pdf](https://www.goldstandard.org/sites/default/files/documents/ics_methodology_guidebook_v1.pdf)

21: Co2 balance reports, KP tests, Stove Test Results Ethiopia. Endeavour

22: Co2 balance impact reporting, 2017-1

23: <https://www.goldstandard.org/blog-item/suppressed-demand-climate-policy-brief>



# LEAVING NO-ONE BEHIND

The Fund deploys an **innovative funding mechanism**, combined with community-led and managed service delivery modalities, to provide affordable, sustainable and universally accessible water and energy solutions that are scalable. The approach responds to the rallying call of the Sustainable Development Goals, and Ireland's Policy for International Development, *A Better World* <sup>24</sup>, that no-one should be left behind in pursuit of sustainable development outcomes, and to ensure the needs of the furthest behind are at the centre of our approach.

### AFFORDABLE

While participating households make a partial contribution towards the cost of providing energy and water solutions, through locally designed and managed, context-appropriate mechanisms, remaining costs are covered by channelling income from selling carbon offsets back to subsidize the services at household level. This allows **services to be provided to households at below cost**, which ensures affordability across all households while creating widespread demand and enabling significant scale up.

### UNIVERSAL

The Fund's approach to water and energy security is inspired by the universalist principles of Article 4 of the Declaration of the UN 2030 Agenda for Sustainable Development - "*no one shall be left behind*" <sup>25</sup>. A community-led and community-managed model is applied in the delivery of water and energy-efficient cooking solutions, mobilizing community capacities to ensure adopted technologies and management practices are tailored to the context and accessible to all. This approach also avoids costs and margins associated with more commercially led delivery models, providing further cost efficiencies and driving prices to households further downwards.

### SUSTAINABLE

The design of water and energy solutions delivery supported by the Fund is informed by many years of failed initiatives

and tough lessons experienced by NGOs, governments and commercial actors – most significantly, with respect to ensuring solutions are **sustainable and manageable at community level**. The Vita Green Impact Fund is designed to deliver sustainable, lasting impact in communities where energy and water security has been strengthened – this includes investing in the long term capacity of the community to manage and build upon the adoption of improved infrastructure and technology. In promoting the adoption of improved cooking technology, the Fund supports context-appropriate stove designs and local, community-led mechanisms to increase uptake. Where possible, local capacities are strengthened in improved cookstove maintenance and manufacture.

In providing access to safe water, tripartite agreements are signed between the community (represented by a Water User Association), the competent local government line ministry, and Vita, governing roles and responsibilities in the sustainable management of the water point. Water User Committees are equipped with the institutional, financial and technical capacity to maintain the infrastructure, carry out essential repairs and ensure the water point remains functional, without the need for external assistance. Functional community-based mechanisms to sustainably manage water infrastructure is a condition of annual accreditation under the Gold Standard impact quantification system<sup>26</sup>. In the years ahead, Vita will develop further learning on innovative mechanisms that support the sustainable, community-led management of natural resources.

### THE COMMUNITY LED TOTAL APPROACH

In partnership with the Community Led Total Sanitation (CLTS) Foundation<sup>27</sup>, pioneered by the globally respected and celebrated Dr Kamal Kar, Vita has developed an innovative, community-led approach to improved cooking technology adoption. The approach is adapted from the **Community-Led Total Sanitation (CLTS)** methodology developed by Dr Kar, which was introduced in Ethiopia at the invitation of Vita in

24: <https://www.irishaid.ie/media/irishaid/aboutus/abetterworldirelandspolicyforinternationaldevelopment/A-Better-World-Irelands-Policy-for-International-Development.pdf>

25: *Transforming Our World: 2030 Agenda for Sustainable Development*, United Nations, 2015

26: <https://www.goldstandard.org/impact-quantification/impact-quantification>

27: <http://www.cltsfoundation.org/>



## LEAVING NO-ONE BEHIND contd/

2006. CLTS is now practiced in 71 countries across the world and mainstreamed into hygiene and sanitation strategies of national governments, UN agencies and NGOs.

Efforts of external agencies to promote adoption of improved cooking technologies in resource-poor rural communities across the world have experienced limited results, often characterized by top-down delivery of prescribed technologies and limited community engagement. The CLT approach recognizes that collective local action is a cornerstone of sustainable change, and **empowers communities** to analyse the environmental, social and economic impacts of deforestation and degradation in their locality, examine contributing factors (such as cooking on highly inefficient open fire stoves) and invites them to co-design solutions. This includes the analysis and adoption of context-appropriate improved cooking technologies, and strategies to promote their adoption and continued use across the whole community, including the most vulnerable, resource poor households.

Results from early pilot studies conducted in 2019 in Gamo Zone, Ethiopia have been highly encouraging; in the two

kebeles (village clusters) in which the approach was trialled, 98% of households adopted an improved cookstove<sup>28</sup>, with the majority of households transitioning from the use of inefficient, open-fire stoves completely.

Building on this experience, Vita and the CLTS Foundation have committed to further learning and refinement of this trusted, innovative methodology's adaptation to rural energy security over the next three years. A Community-Led **Learning Laboratory** has been established in Gamo Zone, Ethiopia to work closely alongside Vita's household cook stove programme, facilitating participatory action research in partnership with local communities. The Learning Lab will seek to develop a comprehensive understanding of the social and institutional factors which influence behaviour change and improved cookstove adoption, and the complex dynamics of energy security choices in the context of the household and rural economy. A key objective of this initiative is to generate a **body of knowledge and best practice** for the Community-Led model, for dissemination, adaptation and application in Ethiopia and across Africa.

Figure 15:  
Women in Mirab Ber village, Gamo Zone Ethiopia map fuelwood use in their community



# INVESTMENT IMPACT

The Vita Green Impact Fund aimed to drive new money into development by providing investors a **triple bottom line**; combining a financial return with independently verified results in both social impact and climate action.

The delivery of social and climate outcomes has become increasingly important as investors respond to the 2030 Agenda on Sustainable Development (SDGs) and the Paris Agreement on climate action. For each of the three “bottom lines”, the fund has delivered results for investors in excess of the expected benchmarks.

Table 1:  
Investment Impact

Green	Impact	Fund
IMPACT METRICS		
Annual Carbon Emissions Reductions, total tonnes CO2 equivalent (Tonnes CO2 equivalent) Emissions reductions per annum, Tonnes CO2 equivalent per €100 invested	Numbers of people accessing safe water and improved cooking technology	Private Investment Raised Repayment of Private Investment
TARGET RESULTS		
420,000 Tonnes CO2 equivalent per annum	200,000 people	€1.5 million raised in loan investment @10% cumulative interest
ACTUAL RESULTS		
808,605 Tonnes CO2 (2019)	311, 308 people	€1.5 million successfully raised €1.9 million carbon offset sales to date Loan repayments on schedule <sup>29</sup>
VERIFICATION AND EVIDENCE		
Gold Standard Accreditation	Gold Standard Impact Assessment	Local independent and international auditors

<sup>29</sup>: A further €1.9 million advance sales to the end of 2021, investors will be repaid full investment with 10% interest 31.12.2021



# LOOKING AHEAD – SCALING UP A PROVEN CONCEPT

When Vita first established the Vita Green Impact Fund in 2016, three long-term aims were agreed by the board and management:

- 1. To enable scaling up of existing sustainable community energy and water supply programmes
- 2. To drive new money into the development sector
- 3. To position Vita as a leader in Social Impact Investment and Carbon Finance

As this report sets out, the Green Impact Fund is now a well-proven concept and ready for scaling up:

- 1. Already 320,000 people have been reached with energy and water solutions, and the Green Impact Fund scale up will target 4 million people
- 2. €1.5 million in private investment was raised for the Fund while indicative commitments of €15 million are in place to scale up the Green Impact Fund
- 3. In January 2020 Vita was invited to present the Green Impact Fund in the OECD Innovative Financing Conference in Paris, and is now the largest NGO provider of carbon offsets in Ireland and the UK

Vita will now further scale up the Green Impact Fund through a regulated Independent Fund with capital of €20 million, with the aim of providing four million people in rural Africa with affordable, sustainable water, energy for cooking and forestry. The new Fund will generate over 4 million tonnes CO2 equivalent of carbon emissions savings. The new Fund invites impact investors to take the lead in advancing the Sustainable Development Goals, delivering social impact alongside climate action. Investors will benefit from a triple bottom line, with an expected return on investment of 10% alongside verified outcomes aligned to the SDGs and climate action.

Figure 16: Hndene Huka, a resident of Molle village in Gamo Zone, Ethiopia, with her improved cookstoves for cooking and boiling



## APPENDIX 1. CASE STUDIES

**Yenenesh Tsige** is 48 and lives with her family. She is a mother of three boys and lives in Chencha, a highland district in the Southern Nations Nationalities and People's Regional State of Ethiopia. Yenenesh explains what life was like before the old water pump was fixed in her village:



*"Before this pump was fixed I would have to walk two hours to fetch water," she says. "I would carry a jerry can of about 25 litres every morning and afternoon. This was my daily routine. No one to help me because all of my children are boys. I don't have a girl. As it is known, it is women's duty to collect water in our community."*

Now Yenenesh has access to water in her village, a five-minute walk from her house. *"Now I can live better as I am getting clean water nearby. Moreover, I get time to do other household activities."*

The new water pump serves 105 households. It is the first time that the community has had access to a regular supply of clean, safe water. This brings many health benefits, including reduced risk of disease due to safe drinking water as well as enabling improved household and personal hygiene. A local water committee has been set up, of which Yenenesh is a member, and the committee collects three birr per month (€0.10) for future maintenance. Vita has provided the committee with training and repair kits, ensuring that Yenenesh and her family can continue to enjoy clean water.

Executive Summary

Objectives of the Vita Green Impact Fund

The Impact Investment Imperative

The Sustainable Development Goals and the Vita Green Impact Fund

Measuring the Impact of the Vita Green Impact Fund

Leaving No-One Behind

Investment Impact

Looking Ahead – scaling up a proven concept

Appendix 1:  
Case Studies

Appendix 2:  
Vita Green Impact Fund  
Logic Model



## APPENDIX 1. CASE STUDIES contd/

**Yordanos**, 39, is a widow and a mother of 3 children and lives in the central highlands of Eritrea, 12 km west of the capital, Asmara. She supports her family through agriculture and working as a daily labourer.



Yordanos and her family live in one room which is her bedroom, living room and kitchen. When using the traditional stove, there was indoor smoke and the room was full of soot. They often suffered from respiratory and eye diseases and used to visit the clinic frequently. She added that with the traditional stove she and her children used to travel long distances to collect fuelwood and carry 20 kg of wood on their backs. They used to collect fuelwood three to four times a week.

*'My children were always late to school and at times being absent,'* said Yordanos. After constructing the fuel efficient stove called *Adhanet* – an adaptation of the traditional model (pictured) – the reduced indoor pollution has had a noticeable impact on the family's health. She is also happy with her children's school performance, as the additional time has allowed them to study and rest with no absenteeism.

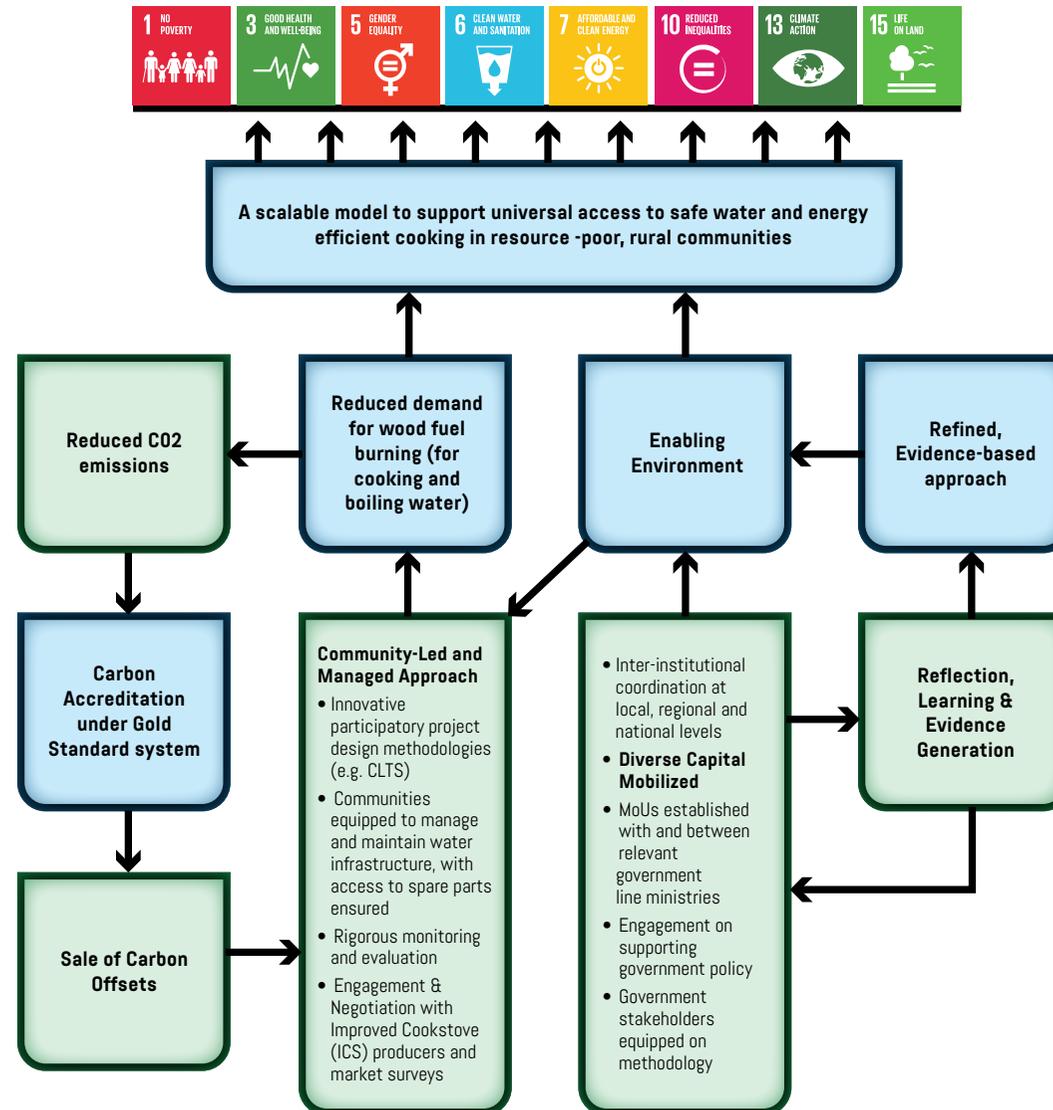
Yordanos can easily use twigs and small branches of leaves often collected nearby her home for fuel now, without the need to travel long distances to collect more substantial fuelwood – in the case of Yordanos family, an additional three hours per week would have been spent collecting fuelwood using the previous cookstove. Her house is always clean as the smoke goes out through the chimney and her family's clothes are clean and neat. Yordanos is now involved in income generating activities like handcrafts and poultry, further enabling her to support herself and her family with essential needs.

*'Adhanet is like its name 'Saviour' (in the local language of Tigrinya) has changed our live for better and made life easier.'*



## APPENDIX 2. VITA GREEN IMPACT FUND LOGIC MODEL

The graphic below illustrates Vita's proven but evolving logic model for the Green Impact Fund, sketching the anticipated pathways to the desired impact.





*"The cost of inaction is catastrophic, far greater than what it will cost us to set out on a truly meaningful, corrective path. With the Paris Agreement, we have both the framework and the foundations to move forward".*

**Michael D Higgins to the UN General Assembly, New York, 2019**



COVER