



Nithio

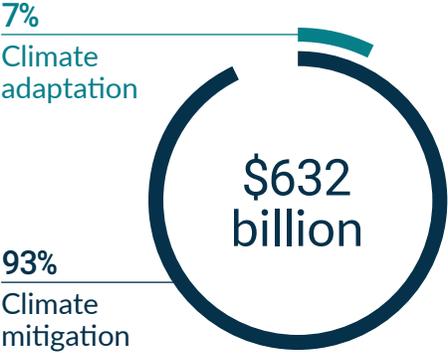


# Nithio Impact Report

2022

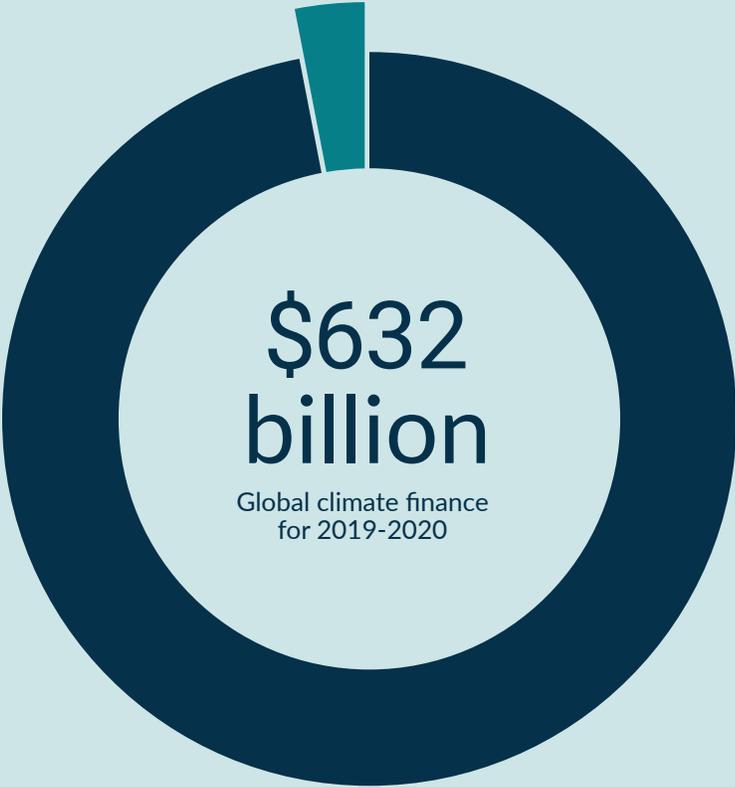
# There Is An Urgent Need To Scale Climate Finance In Sub-Saharan Africa

In 2021, Africa contributed less than 3%<sup>1</sup> of global emissions yet 75% of people without energy access globally are in Africa.<sup>2</sup> Between 2019 and 2020, there was \$632 billion in climate finance, 93% of which went to climate mitigation while only 7% went to climate adaptation efforts. With so much emphasis on mitigation, it is not surprising that Sub-Saharan Africa only received \$19 billion in climate finance, despite being the region that is least climate-resilient.<sup>3</sup>



\$19 billion

Climate finance in Sub-Saharan Africa



## FINANCING CLIMATE JUSTICE

As we head towards COP 27, we're reflecting on some of the themes from last year in Glasgow. Most importantly for us, for the first time climate justice seemed to be a central theme. Sub-Saharan Africa produces less than 3% of global emissions annually, but has long been feeling the impacts of changes to seasonal rains and frequency of storms and drought.

**Nithio was created to address the need for investment in Africa's sustainable transition by unlocking capital at scale and directing it towards highly-impactful efforts to improve energy access and build climate resilience.** To do so, Nithio first developed, tested, and validated an approach to standardize credit risk assessments, purpose-built for the decentralized energy sector—Nithio's Risk Analytics Engine. Investors, energy providers, agribusinesses, and microfinance organizations use Nithio's analytics to understand credit risk and scale investment.

Nithio also recognized the opportunity to leverage its Risk Analytics Engine to scale lending to the solar market through its own vehicle, Nithio Financial Intermediary (Nithio FI). As a blended finance vehicle (combining commercial, development finance, and philanthropic capital), **Nithio FI helps to catalyze both public and private capital at scale towards a just energy transition; building climate resilience and adaptation for communities most impacted by but least responsible for climate change.** Our innovative, risk-informed approach enables Nithio to lend not only to large, international distributors, but also to smaller, local distributors who are providing energy access to last-mile customers.

Our inaugural Impact Report outlines how our data-driven approach has enabled us to provide energy access to communities in Kenya, Nigeria, and Uganda. **Our goal is to continue to scale impact-driven lending operations across communities in Sub-Saharan Africa; this is just the beginning.**

Sincerely,



Kate Steel  
Co-Founder & CEO

# Innovative, Data-Driven Financing: Nithio FI

## NITHIO FI'S FINANCIALS

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Investments

9

Loan commitments

\$15.25 M

Committed capital

\$23 M

## NITHIO FI'S IMPACT

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People with improved energy access

98,413

Metric tons of CO<sub>2</sub>e emissions avoided

32,445

Systems deployed

18,711

People using products to support enterprises

2,407

## MISSION

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Nithio FI drives capital at scale to clean energy companies in Africa to enable energy access, improve livelihoods, and build climate resilience and adaptation. Nithio FI finances a range of clean energy investments with its data-driven approach, including solar home systems, solar productive use assets and appliances.

## SCALABLE GROWTH

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\$170 million total financing provided by 2025, and reaching \$1 billion in total financing by 2030.

## INVESTMENT PLATFORM

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Nithio FI is an open-ended private investment vehicle created to respond to the imminent and acute need for urgent investment in clean energy. As an open-ended vehicle, the investment team is able to deploy capital to borrowers across key markets while the vehicle continues to absorb additional funds in response to growing investor demand. Nithio FI's investors include the U.S. Development Finance Corporation (DFC), FSD Africa Investments, EDFI-ElectriFI, and Nithio Holdings.



“We are proud to continue to support Nithio’s AI-driven lending and analytics for the small-scale renewables financing for households and enterprises. This can lead to the necessary financial aggregation and securitisation and potentially create a pathway to the capital markets for the SDG 7, ultimately unlocking new sources of climate mitigation/adaptation financing in Africa.”

Ashish Kumar  
Climate & Innovation Lead, Shell Foundation

“ We, at EDFI ElectriFI, are excited to support Nithio as it scales up its data analytics services for SHS operators. Nithio’s innovative artificial intelligence solutions greatly contribute to addressing universal energy access and increasing resilience to climate change. By allowing SMEs to attract smarter financing, and investors like us to streamline reporting and offer financing solutions based on better data insights, Nithio is paving the way for further expansion. We are highly confident that it will prove to be a template for even greater impact across the continent.”

Jean-Denis Collin  
Head of ElectriFI, EDFI



## FLEXIBLE FINANCING

Nithio FI provides receivables- and inventory-backed loans, unsecured and off-balance sheet structures. Nithio FI also has the ability to offer local currency solutions through FX hedging or local bank partnerships. Nithio’s team is able to complete transactions quickly in order to respond to market demands, which is critical given the urgency of the need for increased energy access and potential impact.



## DATA-DRIVEN & RISK-INFORMED

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Nithio's goal is to scale capital flows to clean energy solutions. To do so, Nithio has developed its Risk Analytics Engine to standardize credit risk assessments to inform sustainable investment. Nithio's analytics create a market standard that ultimately drives the sector forward to deploy climate finance at scale.

### Why It's Needed

Credit bureaus are limited and therefore credit risk assessments are largely inaccessible across Africa. This makes it difficult to determine ability and willingness to pay for specific products, including solar products. Moreover, each company collects and reports various metrics with very little standardization. The lack of standardization has in turn stalled capital flows needed to reach universal energy access by 2030.

### How Nithio's Approach is Different

Nithio's innovative approach looks forward, whereas previously the industry was relying only on historical data analysis. Our Risk Analytics Engine predicts customer characteristics from

the point of origination, and can accurately forecast repayment rates and future cash flows of companies with an accuracy that outperforms estimations drawn from historical time series data. The output is a tailored assessment of aggregated customers' credit risk in the context of a distributor's portfolio, providing integral insight for due diligence, improving distributors' bankability, monitoring the distributor's portfolio health, and tracking investment impact. This new, innovative credit risk assessment enables investors to sustainably scale their clean energy financing in a standardized approach that hasn't been possible before.

### How Nithio's Risk Analytics Engine Works

Nithio combines localized geospatial socioeconomic and demographic data down to the 1km<sup>2</sup> with anonymized customer repayment data. Together, these data sources serve as training data for Nithio's Machine Learning models. Nithio has processed and analyzed more than 5 million household repayment records.

“Nithio's Risk Analytics Engine allows our team to rapidly interrogate payment data and enter into a collaborative discussion with our clients about the health of their portfolio in a way we have wanted for years but lacked the technical skills and capacity to do on our own. The Portfolio Portal and ongoing monitoring services ensure that both our team and our client maintain a shared view of how they are performing over time. In a sector built on mobile money transactions and digital records, this is how it should be.”

Avi Jacobson  
Head of Portfolio, SunFunder

\$15.25 M



9

LOAN COMMITMENTS

KEY MARKETS:  
KENYA • NIGERIA • UGANDA

INVESTMENTS

## Nithio FI's Portfolio

### BORROWER SPOTLIGHTS

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 **Bboxx** Nithio provided a loan to Bboxx Energy Access Nigeria Ltd (BEAN) to finance the sale of Bboxx Solar Home Systems (SHS) across Nigeria. Bboxx designs, manufactures, distributes, and finances SHS targeted at end-consumers on a PAYGo basis. To date, Bboxx has deployed over 500,000 SHS across Sub-Saharan Africa. This partnership will assist in BEAN's working capital needs in Nigeria. Financing will extend to related components such as panels, batteries, and appliances – such as radios, TVs, fans, fridges, water pumps, etc. BEAN's continued growth in Nigeria, in part enabled by Nithio's investment, aims to provide millions of people access to clean energy over the upcoming years which will result in millions of CO<sub>2</sub> emissions being avoided.

 **WINOCK** Nithio continued its partnership with Winock, a solar productive use appliance company, with a follow-on loan to its initial financing. This most-recent loan enables Winock to finance receivables from rooftop solar systems, solar efficient equipment, and appliances to micro-businesses in Nigeria. Nithio provided its first loan to Winock in 2020, which positioned the company to scale at a critical juncture and catalyzed additional financing from investors such as Acumen and Charm Impact Capital.

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“Nithio has played a significant role in enabling Winock to scale our delivery of energy access products. We are excited to be partnering with Nithio again to expand our operations in Nigeria.”

Sanmi Lajuwomi  
CEO, Winock

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Nithio partnered with USADF to support Rafode, a micro-finance institution in Kenya, with Nithio providing a loan and USADF providing grant capital. Nithio has since upsized its initial loan to Rafode due to positive performance. This project is anticipated to facilitate access for 6,000 households, small and medium enterprises, and smallholder farmers to access solar home systems and solar water irrigation pumps through availability of these products on credit. Rafode, headquartered in Kisumu, Kenya, leverages Information Communication Technology (ICT) to manage its operations efficiently, which enables it to scale rapidly in rural areas as it delivers better services to clients.



Nithio provided a debt investment to d.light, an industry-leading manufacturer and distributor of solar products across Africa and India. d.light has been at the forefront of providing clean, accessible energy in developing countries over the last 16 years. Nithio's loan helps the company push towards its goal of impacting 150 million people by fiscal year 2024 and 1 billion people by 2030 through its sustainable energy products. Nithio's financing will help d.light expand in existing and new markets through product innovation and refine and scale its route-to-market execution and operations to drive maximum efficiency. It will also enable d.light to grow its distribution channels to promote their flexible financing options across Sub-Saharan Africa.

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“The loan will enable d.light to grow our product range and broaden our impact as we journey to Transform 1 Billion Lives by 2030. The Nithio team has been amazing to work with – flexible, practical, and fast. We look forward to a long and fruitful partnership together.”

Ned Tozun  
Co-Founder, d.light

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# Scaling Impact: We're Just Getting Started

## NITHIO IS IMPACT-DRIVEN

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Nithio is inherently an impact-focused platform, strongly dedicated to an inclusive and equitable transition, especially in Africa, where the need is most acute. We apply our data-driven approach to analyze and track our impact performance and potential across our investments. We have been lending through the Nithio FI vehicle since mid-2021, with two pilot loans prior, and have already made significant strides towards improving households', microentrepreneurs', and smallholder farmers' livelihoods and climate resilience through new or improved energy access.

Nithio directly works towards achieving Sustainable Development Goals (SDGs) through expanding access to clean and affordable energy, scaling climate adaptation efforts to communities most in need, improving health environments through cleaner fuel use, and improving women and girls' livelihoods through cleaner home and work environments, financial inclusion, and saving time on daily activities.



## Impact Numbers

	KENYA	NIGERIA	UGANDA	TOTALS
<b>People with improved energy access</b>	<b>84,354</b>	<b>7,843</b>	<b>6,216</b>	<b>98,413</b>
MTF Tier 1*	15,798	1,734	1,182	18,714
MTF Tier 2**	60,834	6,109	5,034	71,977
<b>People with access to clean cooking</b>	<b>7,722</b>	<b>0</b>	<b>0</b>	<b>7,722</b>
<b>People using products to support enterprises</b>	<b>2,038</b>	<b>205</b>	<b>164</b>	<b>2,407</b>
Women	375	40	33	448
Men	1,476	165	131	1,772
Unknown	187	0	0	187
<b>Metric tons of CO<sub>2</sub>e emissions avoided</b>	<b>23,347</b>	<b>7,199</b>	<b>1,899</b>	<b>32,445</b>
<b>Systems deployed</b>	<b>15,988</b>	<b>1,544</b>	<b>1,179</b>	<b>18,711</b>
Women	2,705	298	239	3,242
Men	10,639	1,246	940	12,825
Unknown	2,644	0	0	2,644

\* At least 3 W, at least 12 Wh, and lighting of 1,000 lhr per day.<sup>4</sup>

\*\* At least 50 W, at least 200 Wh, and Electrical lighting, air circulation, television, and phone charging are possible.<sup>4</sup>

20 NITHIO TEAM  
MEMBERS ACROSS  
7 COUNTRIES



WOMEN

40%  
Leadership

60%  
Board

47%  
Across the Company

PEOPLE OF COLOR

20%  
Leadership

80%  
Board

50%  
Across the Company

# Building a Diverse, Equitable, and Inclusive Team

## TEAM DE&I

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Our team is guided by our shared values of excellence, integrity, flexibility, collegiality, and a steadfast commitment to our vision: to provide unparalleled consumer credit intelligence that can unlock capital at scale and enable energy access for millions of people. We recognize Nithio must continuously build, develop, and focus on fostering a diverse, equitable, and inclusive work environment in order to fully commit to the goal of a just energy transition.

**Nithio is continuously working to build a diverse, equitable, and inclusive environment:**

**D Global hiring:** Nithio aims to build the best team and is not restricted by location

**Diverse pipeline:** Nithio has built professional relationships with a broad range of universities and trade groups to continue to develop a diverse candidate network

**E Equitable compensation:** Compensation is based on role versus on location

**Non-traditional hiring:** Nithio hires for diversity of experience, expertise, and team value-add versus standard metrics of years of experience or education

**I Dedicated development:** The team organizes professionally-led company culture sessions and places a strong emphasis on professional development opportunities, such as courses, trainings, and conferences

**Fully-remote culture:** Nithio embraces staff across the globe through rotating retreat and workshop locations, allowing exposure to different cultures, offices, and teams within Nithio



## 2023 Vision

As Nithio looks toward continuing its growth and impact in 2023, we are focusing on:

- **Making actionable strides towards a just energy transition.** The fierce urgency of the climate crisis requires swift and bold action. Billions of dollars need to be unlocked and channeled towards improving energy access and ensuring climate resilience for the most vulnerable populations across the continent. Nithio's analytical approach provides investors with a clear understanding of risk and how best to allocate their capital in order to achieve meaningful impact to address climate change and achieve universal energy access.
- **Improving accessibility to products that build climate resilience.** Nithio is focused on scaling access to solar productive use products as they build climate resiliency for households, smallholder farmers, and micro-entrepreneurs. For example, these products enable consumers to adapt their businesses in the face of climate change hazards and natural disasters, such as inaccessibility due to floods, food loss due to rising temperatures and drought, and communication loss due to storms. They also provide consumers with new livelihood opportunities, the ability to work longer hours more productively, and greater household income stability. Moreover, agricultural and entrepreneurial resilience indirectly leads to a reduction in food insecurity and poverty.
- **Continuing to provide the analytics and tools for helping investors understand climate risk down to the household level across communities most vulnerable to the effects of climate change.** Nithio will continue to leverage its Risk Analytics Engine to provide insight on consumer ability to pay for services, standardize credit risk assessment, and inform capital deployment.

# Methodology: How We Measure Impact

## DATA INPUTS

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Nithio leverages its robust database, which comprises localized geospatial demographic and socioeconomic data (down to the 1 km<sup>2</sup>), and energy customer data.

## FRAMEWORK

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Nithio computes impact metrics in alignment with industry standards as well as carries out more contextually specific impact measurements using Nithio's proprietary Risk Analytics Engine, which are useful to stakeholders.

### **Nithio applies the impact measurement framework of off-grid solar products developed by GOGLA<sup>5</sup>**

- energy access
- kerosene replacement
- metric tons of CO<sub>2</sub>e emissions avoided
- number of systems deployed
- number of people reached with energy access
- number of people reached with productive use assets
- number of people using products to support enterprise

Nithio leverages its database and Risk Analytics Engine to disaggregate impact metrics by key variables such as gender and location. Tracking gendered impact is crucial because women and girls are disproportionately affected by energy poverty. With the built-in granularity of its geospatial data, Nithio also provides impact analysis on a sub-national level, which is important as many outcomes vary based on geographical settings and contexts. For example, Nithio considers the elevated CO<sub>2</sub> emissions reduction impact for larger SHS products in urban areas of Nigeria given the population's high dependence on diesel generators for full or partial energy consumption.

Nithio leverages its Risk Analytics Engine to enhance the precision of potential impact across the lifespan of a system. Nithio's prediction model forecasts the lifetime repayment trajectory for each household using an energy product. Since most PAYGo products are based on pay-for-usage tokens and payment models, the pace and amount of repayment can be roughly translated into the household's energy usage and utility derived from the product. We use this prediction output to calculate the specific household's likelihood of system loss, whether caused by default or intermittent usage for a period less than the product's full potential lifespan. This approach to discounting for system loss is a more accurate forecast of the lifetime impact of a solar home system on a household's or community's well-being.



## Citations

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6. This includes kerosene replacement per the GOGLA framework, as well as Nithio's own calculations for medium and high capacity SHS replacement of diesel generators in Nigeria specifically. We assume estimated CO<sub>2</sub> emissions per small-capacity diesel generator are an average 69.92 metric tons per year.



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