



Investment works

Portfolio learning

Insight

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How can our investments make a difference to people living in poverty?

Practical thinking on investing for development

Insight is a series of practical and digestible lessons on the issues of private sector investment and development. They're based on our experiences, knowledge and research and are aimed at investors, businesses, development professionals, and anyone with an interest in private sector development.

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What's the issue?

Working in partnership with DFID, CDC is committed to making investments that benefit local communities in some of the world's poorest countries. We want to better understand how CDC's investments serve people living in poverty – who the beneficiaries are, and how their lives have been impacted.

What approach did we take?

We are increasingly using a range of cutting-edge measurement and evaluation tools to help us gain insight into what impact is experienced by which suppliers, workers and customers, and how much impact occurs, in scale, depth and duration.

One exciting tool in our toolbox is Lean Data, an approach to impact measurement developed and deployed by the social enterprise 60 Decibels. This briefing sets out the key findings from Lean Data studies of fourteen CDC investee companies, which cumulatively surveyed thousands of customers, suppliers and workers across Africa and South Asia (further information on five of the studies can be found in the appendices to this report).

CDC and DFID have also benefited from the benchmarks 60 Decibels have gathered working with more than 200 other social enterprises. This helps both organisations understand how our investments perform against comparable organisations.

Focus of our analysis

To help us better understand how CDC's investments serve people living in poverty, we collected data on poverty levels using an adapted version of The Poverty Probability Index (PPI®). The PPI is a statistically-sound, yet simple to use poverty measurement tool. The answers to a handful of questions about a household's characteristics and asset ownership are used to compute the likelihood that the household is living below various internationally recognised poverty lines.



I have water all the time, even during the dry season I can plant crops as I wait for the rains to come.

Customer of an agriculture company

The data in this report was gathered using a specifically adapted five question version of the tool and calibrated to both international poverty lines, as well as lines that can be used to identify customers or employees from higher income strata.

The companies involved in the Lean Data studies are predominantly from CDC's Impact Fund, which invests through intermediary funds into businesses across Africa and South Asia. The businesses that ultimately receive CDC investment provide underserved populations with access to better jobs and basic goods and services such as energy, water, sanitation, health, education and financial services. While this sample represents a small proportion of CDC's total investment portfolio, the data comes from a good range of companies by sector and maturity.

What are the key things we've learnt?

1. The businesses we looked at reach the poor and can reach the very poorest

Amongst the fourteen companies, 61% of customers, employees or suppliers surveyed are from low-income households, i.e. where household members live on less than \$6 per person per day (at 2011 purchasing-power parity prices).

Over a quarter (28%) are from households living below the relative poverty line (\$3.10 per day), and a tenth of beneficiaries are below the extreme poverty line (\$1.90 per day).

This performance is broadly in line with the performance and findings from other companies that have undertaken Lean Data projects.

Company	Region	Sector	Poverty score % living below \$3.10 per day	Poverty score % living below \$6 per day
Company 1	East Africa	Off-grid energy	30%	66%
Company 2	West Africa	Education	22%	54%
Company 3	East Africa	Education	29%	67%
Company 4	West Africa	Financial inclusion	9%	45%
Company 5	East Africa	Energy/Agriculture	12%	34%
Company 6	India	Education	13%	59%
Company 7	West Africa	Agriculture	82%	97%
Company 8	East Africa	ICT	3%	15%
Company 9	East Africa	Off-grid energy	27%	60%
Company 10	East Africa	Off-grid energy	30%	60%
Company 11	East Africa	Off-grid energy	40%	71%
Company 12	India	Off-grid energy	61%	95%
Company 13	India	Off-grid energy	39%	86%
Company 14	West Africa	Financial inclusion	10%	45%



If you have a business like mine in a remote area with no electricity, it's a very good option for you.

Customer of an off-grid energy company

61%

of customers, employees or suppliers surveyed are from low-income households

2. Investment can play an important role in driving down prices and establishing the infrastructure that can reach marginalised customers

The data shows that some companies and sectors have been particularly successful at reaching the poor. For example, as investment in home solar systems has increased, these products have become significantly more affordable. Today, 30% of solar home system customers live on less than \$3.10 per day.

It is also possible that modern businesses, which attract international investment, can include and benefit a high proportion of the poor in their supply chains. An agricultural processor in Northern Ghana in which CDC invests is working with suppliers of whom more than four-fifths live on less than \$3.10 per day. These predominantly female harvesters report that their incomes, food security and confidence have improved as a result of supplying to the company. Similarly, for one CDC investee that focuses on establishing distribution outlets in rural Indian villages, half of its customers are living in poverty, and for one of the products it sells, this proportion rises to as much as three-fifths.

3. Products and services supplied by CDC investments are making material and lasting improvements in the lives of poor customers

Of course, it is not enough just to reach the poor through investments. It is also of the utmost importance that the incomes they have and the products and services they consume are making material improvements in their lives.

We will be looking more deeply into these kinds of questions in future Lean Data studies, but already data from across these companies illustrate some significant self-reported improvements in people's lives.

For instance, when asked to describe the changes they experienced in their own words, four out of five respondents said that their quality of life had meaningfully improved because of purchasing a good or service or working within the supply chain of a CDC investee. When asked to describe in what ways their lives had changed, customers mentioned themes that align to six of the Sustainable Development Goals.

Our studies dived deepest into the impacts of our off-grid energy companies. We were able to collect data on, and better understand the impact of our companies against fourteen standardised measures of impact developed by 60 Decibels. Using this data, we learnt a range of insights about our impact.

For instance, we discovered that each solar home system sold by one Ugandan business mitigated 1.1 tonnes of carbon – equivalent to driving 4,500 miles in an average car; that purchasers of solar lanterns from one Indian company saved \$186 a year, equivalent to 13% of a poor household's annual expenditure; that four-fifths of purchasers of solar home systems or solar lanterns reported using their products for educational purposes, increasing their study time by an average of 44 minutes; and that Kenyan smallholder farmers who switched from diesel to solar irrigation pumps saved an average of \$676 a year.

What does this mean?

We are encouraged by the insights from these studies, but this is only the start of the analysis we intend to do. We will continue using more end-beneficiary surveys approaches like Lean Data to deepen our understanding of how we can maximise our impact and benefit people living in poverty through our investments.

30%

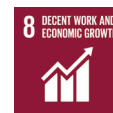
of customers of solar home systems live below \$3.10 per day



[Before purchasing the product] I was spending much money on lighting and sometimes would be forced to close shop early because of enough paraffin.

Customer of an off-grid energy company

Sustainable Development Goals aligned to outcomes reported by customers



After taking [Company's] training, the fear factor in me has disappeared and I now have access to a lot of jobs.

Customer of an education company

The following appendices include four examples of the Lean Data studies that this briefing is based on.

Appendix 1

Agricare

Lean Data study

Company:	Agricare
Sector:	Agriculture
Geography:	Ghana
Fund:	Injaro Agricultural Capital Holdings



I was able to send my son to Kanton Senior High School and can afford the fees now. I am able to cater for most of my family needs.

Smallholder selling to Agricare through the maize out-grower scheme

Headline impact

- Agricare’s customer base consists mainly of small-scale commercial poultry farmers who own flocks of less than 1,000 chickens.
- Almost all farmers recorded significant productivity gains after using Agricare feed, but issues with stock-outs and large product packaging limit the potential to impact lower-income customer segments.
- Smallholders selling maize to Agricare through an out-grower scheme particularly value the inputs and advice on good farm management, which they would otherwise find difficult to obtain.

Company overview

Agricare is a commercial animal feed mill based in Kumasi in Central Ghana. Poultry feed is the company’s main product line. Agricare is a portfolio company of Injaro, an impact-oriented fund manager focused on West Africa who has received investment from the CDC Impact Fund¹.

Agricare sells animal feed direct to farmers and via a network of sales agents in Ghana and Togo. Agricare has also established an out-grower scheme to secure local access to raw materials.

¹ CDC’s Impact Fund invests in funds and other intermediated vehicles that deliver high development impact. In 2014, the Impact Fund committed \$15 million into Injaro Agricultural Capital Holdings, an agricultural fund managed by Injaro Investments. In 2015, Injaro invested \$4 million into Agricare in return for a 48% equity stake. See <http://agrifinanceghana.org/story/injaro/>

Agricare

Research focus

Ghana's poultry industry is constrained by the lack of reasonably priced and effective feed, which is a critical input accounting for as much as 80% of production costs for farmers. Low-quality feed leads to a slow growth in chickens and low egg production.

On the consumer side, Agricare aims to differentiate itself from other animal feed options available in terms of product quality and price leadership. Because Agricare sells most of its poultry feed through sale agent intermediaries, the company wanted to directly engage end-customers to better understand their wants and needs. On the supply side, Agricare imports the two main ingredients required to formulate poultry feed – yellow maize and soya – but due to concerns about currency fluctuations and customs delays, the company was interested in establishing a local supply chain². Agricare had set up an out-grower scheme for maize involving 100 farmers across five northern regions in Ghana³. At the time of research two harvests had taken place, and Agricare was in the process of deciding how to scale-up the scheme ten-fold to 5,000 hectares, so wanted to learn what had worked during the pilot, and what would be improved⁴.

This involved carrying out stakeholder surveys to understand three dimensions of impact: who are the customers and suppliers experiencing change, what economic and social value is being created, and what contribution does this make to what would have happened without the investment?

To answer these questions the Acumen Lean Data team was engaged to conduct in-person surveys with a representative sample of Agricare end-customers and out-growers. Over six weeks, phone interviews took place with 170 Agricare feed customers, along with 12 of the company's 35 retail outlets. To construct a performance benchmark for Agricare, we also surveyed 80 farmers who were purchasing competitor feeds. On the supplier side, we spoke to 86 farmers selling maize to Agricare. Interviews averaged between 15-20 minutes.

Research findings

– **Agricare benefits more underserved consumers than expected.** Agricare thought that its customer base consisted mainly of medium- and larger-scale farmers. By contrast, we found that three-quarters of their end-customers had fewer than 1,000 chickens—considered in Ghana to be the smallest type of small-scale commercial farm⁵. Almost all farmers reported productivity gains after using Agricare feed: 86% of farmers keeping hens for egg production reported a better laying percentage⁶; while 91% of broiler farmers who rear poultry for its meat noted significant changes in bird weight.



I have been able to raise money to support my children's education.

Smallholder selling to Agricare through the maize out-grower scheme

86%

of farmers using Agricare feed and keeping hens for egg production reported a better laying percentage



I was taught how to apply fertilizer to my farm, which really increased the yield.

Smallholder selling to Agricare through the maize out-grower scheme

² From an impact investor perspective, sourcing locally in Ghana also has the potential to generate jobs and incomes for smallholder farmers.

³ In this scheme, Agricare pre-finances the provision of seeds, fertilizer and extension services to the farmers and these costs are recovered with harvested maize.

⁴ The contract was brokered by a USAID project, ADVANCE, in partnership with the Ghana Grains Council (GGC) https://www.microlinks.org/sites/default/files/resource/files/Report_No__45_-_Policy_Constrained_VC_Case_Studies_Ghana_ADVANCE_Success_Story.pdf

⁵ Small-scale poultry farms are generally thought to have between 50-5,000 birds. Medium scale has 5,000-10,000 birds, and large scale have more than 10,000 birds.

⁶ Laying percentage is the proportion of a farmers' chicken flock laying eggs at a given time.

Agricare

– **The economics of small-scale farming shapes customer wants and needs.**

Listening to customer concerns, we found that many farmers expressed a desire for different-sized packaging than Agricare's standard 50-kilogram bag. Smaller farms, which we now know comprise the majority of Agricare's customers, purchase smaller volumes and found the large sacks harder to transport. As it happened, Agricare produces 25-kilogram bags but had not proactively distributed them, as it thought there was little demand.

We also found that the main reason some customers stopped buying Agricare products was because they weren't consistently available at local retailers. Because smaller-scale farmers tend to buy just in time rather than keep inventories and use the same feed brand throughout a hen's life, it is important to keep retailers stocked.

– **The out-grower scheme has pro-poor potential – but not for the reasons everyone thought.**

Agricare hypothesized that its value proposition to out-grower farmers was access to a guaranteed market and stable price for maize. While Agricare did provide a competitive price – and a promise to purchase a fixed volume of produce – it turned out that farmers would have little trouble selling maize to alternative buyers, and local traders often provided better (if more volatile) prices. But what farmers valued most was access to inputs – particularly higher-yielding hybrid seeds on credit- and technical assistance about good farm management provided by the company. The supplier farmers were generally poor smallholders – using the PPI Scorecard, half (45%) lived on less than £2.50 a day – who found it hard to get hold of quality agricultural products such as improved seeds in local markets. Only 30% of farmers had access to hybrid seeds before participating in the scheme.

45%

of Agricare's supplier farmers live on less than £2.50 a day

What happened next?

These findings had significant implications for how Agricare markets its products and manages its supply chain. To better satisfy its smaller-scale market segment, the company is pro-actively marketing its 25-kilogram bags; committing to regular weekly calls between Agricare's marketing manager and its retailer network to estimate demand and smooth stocking issues; and distributing a simple questionnaire, focused on retention rates and drivers, for Agricare field staff to monitor the sustainability of the out-grower scheme.

Sekaf

Lean Data study

Company:	Sekaf
Sector:	Agriculture
Geography:	Ghana
Fund:	Injaro Agricultural Capital Holdings

Headline impact

- Sekaf has a supplier base of 5,000 shea nut collectors and processors, the majority of whom are women living below the poverty line.
- Two-thirds of suppliers have recorded income increases as a result of selling to Sekaf.
- This additional income supports supplier livelihoods by allowing them to cover critical household expenses such as buying food and paying school fees.
- Sekaf supports micro-saving and lending groups in supplier communities, which provide women with an important source of finance both for subsistence and business expansion.



I had nothing and was doing nothing but now, working with Sekaf, I get income.

Sekaf processor

Company overview

Sekaf is a social enterprise that produces unrefined organic shea butter and shea-based bath and beauty products under the TAMA® brand name. Sekaf is a portfolio company of Injaro, an impact-oriented fund manager investor focused on West Africa who has received investment from the CDC Impact Fund⁷.

Sekaf sources from shea nut collectors and shea butter processors from 17 communities located around Tamale in northern Ghana. It also provides a range of supporting services such as training, as well as sponsoring a community micro-savings programme.

⁷ CDC's Impact Fund invests in funds and other intermediated vehicles that deliver high development impact. In 2014, the Impact Fund invested \$15 million into Injaro Agricultural Capital Holdings, an agricultural fund managed by Injaro Investments.

Research focus

Demand for shea butter has grown in recent years, so Sekaf is in the process of upgrading its processing capacity to allow for a fivefold increase in production. To support this increase, Sekaf needs to expand and strengthen its supplier base. Sekaf therefore sought feedback from its current suppliers to understand the factors driving supplier acquisition and retention, and what it could do to further develop a relationship within supplier communities.

This involved carrying out stakeholder surveys to understand two dimensions of impact: who are the suppliers experiencing change, and what economic and social value is being created?

To answer these questions the Lean Data team were engaged to conduct in-person data collection with a representative sample of Sekaf suppliers. 251 collectors and 42 processors were interviewed over a two-week period in February 2018.

Research findings

- **Sekaf reaches under-served suppliers.** Almost all of Sekaf's 5,000 suppliers are women, and the majority (eight out of ten) live below the poverty line. Half live in extreme poverty, compared to a national benchmark of 9.6 per cent⁸.
- **Sekaf has a positive impact on the livelihoods of shea nut collectors and their families.** Sekaf pays a premium over the market price for organic nuts. This provides shea nut collectors with a vital supplementary income stream during the 4-month shea season⁹. Two-thirds of collectors report income increases as a result of selling to Sekaf – which is used to cover expenses related to family such as buying food at local markets, and paying for school fees, clothing and other household goods. Most collectors (71%) still have another source of annual income besides selling to Sekaf, primarily farming.
- **Sekaf plays a central income-earning role for shea butter processors.** For the vast majority of processors, Sekaf is their sole income source. Only 7% earn money from other activities such as processing rice, selling foodstuff and trading in the market. As well as covering household expenses, one fifth of processors used the income from Sekaf to invest in expanding their own businesses or trading activities.
- **Sekaf is providing women with access to finance.** Sekaf supported the establishment of Village Savings and Loans Associations (VSLA) in shea nut collection communities. Women are trained to establish self-financed and self-managed micro-saving and lending groups. Two-thirds of Sekaf suppliers are now members of the VSLA, with half having taken out a loan in the past year. For almost all suppliers, the VSLA is currently their only source of credit¹⁰. Suppliers also report strong agency over the use of these funds: 65 per cent of processors and 75 per cent of collectors who had taken out a loan said they were the sole decision-makers for how to use it.



I thank God that Sekaf is here to support us, because it helped reduce the hardship in financing the family.

Sekaf processor

80%

of Sekaf's suppliers live below the poverty line, and half live in extreme poverty

⁸ World Bank, 2013

⁹ The shea nut season coincides with the long dry season in Northern Ghana when household food stocks can run low, making income during this time particularly important

¹⁰ 96% of respondents had not taken a loan from anywhere else in the past shea nut collection season.

Sekaf

- **Sekaf is offering women with opportunities to improve their livelihoods.** 72% of collectors report an improved quality of life as a result of selling to Sekaf. The effect is even greater on processors, where 98% reported an improved quality of life, with almost half reporting a significant improvement since they started making shea butter for Sekaf. Most of these was attributed to the income increases, and what this means for households: An improved ability to care for family needs such as food and school fees, along with greater financial inclusion from the savings and loans.
- **Small-scale shea nut collection and processing is not easy.** An estimated three million rural women in Ghana make a small income from shea butter. But it is hard work. Women take the woven bags that Sekaf provides and venture into the bush to collect nuts that grow in common lands. Scorpions, snakes and bees are the biggest threats and several women bear the scars of these unpleasant, but all too common encounters. Nuts are then crushed, roasted, ground and cooked – in a very hot and very manual process. Processors indicated they inhale a lot of fumes, and are exposed to flames that can cause burns. No wonder, then, that despite the Sekaf premium, associated services and resulting livelihood gains, 86 per cent of respondents still reported challenges collecting shea nuts.

What happened next?

These findings gave Sekaf new insight into the value the company creates for shea nut collectors and processors. It also highlighted a number of challenges, helping focus on areas for improvement as the supplier-base continues to grow. Sekaf is currently working to boost access to Sekaf services – training, VLSA, woven bags and community warehouses – across all suppliers, and plans to explore mechanisms to provide protective gear and equipment to guard against snakes and other threats in the field.

98%

of Sekaf's processors reported an improved quality of life (and 72% of collectors reported an improved quality of life)



Sekaf has improved my life because I am able to support my children in school and feed them.

Shea nut collector

SunCulture

Lean Data study

Company:	SunCulture
Sector:	Agriculture / Energy
Geography:	Kenya
Fund:	Energy Access Ventures

Headline impact

- SunCulture’s solar-powered water pump saves customers time and money – replacing expensive diesel pumps and inefficient manual methods.
- The RainMaker has a multi-dimensional impact and can be used to irrigate farms, support livestock and meet household water needs like cooking and cleaning.
- Almost half of early adopters of the product reported an increase in their farm productivity and income due to the solar pump.



I don't have to struggle to go to the river to get water, I just switch on the pump and you get water.

SunCulture customer

Company overview

SunCulture provides solar-powered irrigation solutions in East Africa. The company aims to be a one-stop shop for smallholders, supporting them with the tools, knowledge and finance to grow their businesses. SunCulture’s product range includes spray, mist and drip irrigation, as well as micro-pumps. SunCulture-trained technicians and agronomists also provide on-farm training, soil analysis and agronomy support by mobile phone – with next-day delivery and installation available anywhere in Kenya.

SunCulture is a portfolio company of Energy Access Ventures (EAV), a venture capital firm helping entrepreneurial businesses in Sub-Saharan Africa to bring reliable electricity and its benefits to low-income people in rural and peri-urban areas. EAV has received investment from the CDC Impact Fund¹¹.

¹¹ CDC’s Impact Fund invests in funds and other intermediated vehicles that deliver high development impact. CDC committed Euro 16.5 million into the EAV Fund in 2015, and 5 million in 2018.

Research focus

Over 80 percent of land in Kenya is not suitable for rainfed agriculture, but only three per cent of Kenyans irrigate – meaning agricultural yields trail world averages by approximately 50 percent¹². Most farmers live off grid, and those farmers who do irrigate rely on expensive and environmentally unfriendly petrol pumps or inefficient manual methods; creating a gap between how many farmer currently irrigate, and how many need to irrigate to become more productive.

In 2017 SunCulture launched the RainMaker, a solar-powered water pump that can lift 7,000 litres of water per day and can pump from wells up to 100 meters deep – compared to current market alternatives that draw from 10 meters deep¹⁷. Using energy from a portable 120-watt solar panel and battery bank, the RainMaker is able to pump enough water to irrigate a half-hectare farm and fulfil household water needs like drinking, cooking and cleaning.

SunCulture wanted to gather feedback from its early adopter customers to better understand product satisfaction, and to learn what more the company could do to further its mission of helping farmers to grow more while spending less. This involved carrying out stakeholder surveys to understand three dimensions of impact: The demographic and socio-economic profile of customers ('who'); the concrete benefits of using the RainMaker ('what'); and the depth of impact on variables such as time- and cost-saving ('how much')

To answer these questions the Lean Data team were engaged to conduct in-person data collection with a representative sample of RainMaker customers. 145 farmers were interviewed by telephone over a two-week period in October 2017.

Research findings

- **Cost-saving.** Before purchasing the RainMaker, half of customers used a fuel pump or a generator for water extraction. Electric water pumps are not viable without a connection to the grid, so farmers mostly used diesel – which made irrigation not just expensive, but an unaffordable option for many smallholders.
- **Time- and effort-saving.** Most customers got their water manually before the Rainmaker, which required enormous amounts of time, effort and energy to physically move water. People spent an average of 17 hours per week collecting water from wells, boreholes or communal rivers and lakes – time which has now been freed up for more productive uses, and to tend to family needs.
- **Farming output.** Although some customers had only been using RainMaker for a matter of months, half already reported an increase in their farm's productivity due to the solar pump. While the research didn't quantify these gains, farmers have since reported to SunCulture an average increase in crop yield of 300% per year.



I have water all the time even during the dry season I can plant crops as I wait for the rains to come.

SunCulture customer

300%

Farmers using SunCulture's solar-powered water pump reported an average increase in crop yield of 300% per year

¹² <http://explorer.sustainia.me/posts/samir-ibrahim-saving-kenyan-agriculture-one-drip-at-a-time> and <https://www.youtube.com/watch?v=jdaQLljrGU>

SunCulture

- **Beyond farming.** 70% of customers use the pump to get their domestic water supply, in addition to land irrigation. The high use of the pump for domestic purposes such as water for washing clothes and general household consumption suggests that the Rainmaker is creating value for families well beyond the farm.
- **Transformational potential.** SunCulture's Net Promote Score (NPS) – a standard measure of customer satisfaction – is very high, outperforming both global and Acumen Lean Data benchmarks¹³. This suggests customers value the economic benefits and reduced workload associated with the Rainmaker and associated SunCulture services. Almost 90 percent of customers say that the Rainmaker is now their main source of extracting water, making the product central to maintaining rural livelihoods.

What happened next?

The company's design philosophy – *Iterative Design for Eventual Affordability* (IDEA) – aims to build high-quality products and make them increasingly available to lower-income farmers. RainMaker is now available on SunCulture's pay-as-you-grow platform, meaning customers can make instalment payments via mobile phone rather than having to pay in full upfront, which is expected to increase affordability for smallholders.

Based on the deep dive, the Lean Data team worked with SunCulture to put in place a process for the company to generate repeated customer insights, using data points from the research that were found to be the most powerful. This is helping SunCulture to track segmentation, satisfaction and opinion across the customer journey over time.

90%

Almost 90% of customers say that SunCulture's solar-powered water pump is now their main source of extracting water



Before I could not plant kales during the dry season, now we plant them all the time and sell them and have a good harvest

SunCulture customer

¹³ SunCulture's NPS was higher than Lean Data's 2017 benchmarks for both agriculture and energy companies in Africa.

poa! Internet

Lean Data study

Company:	Poa International Limited
Sector:	ICT
Geography:	Kenya
Fund:	Novastar Ventures East Africa Fund

Headline impact

- The majority of poa! Internet home broadband customers recorded quality of life improvements due to increased affordability of internet services and a more reliable internet connection. This allowed them, among other things, to work or study from home.
- Users report being better informed about the world and having access to information as the greatest benefits of internet access at home.
- Improved access to unlimited data has changed the way students and teachers use the internet for teaching and learning.
- Students using poa! Internet at school are more likely to benefit from information and communications technology (ICT) training during school hours and made more use of internet for private purposes, including accessing educational content.
- However, there was no evidence that the internet was being used to enhance learning outside of ICT training. Improvements in school ICT infrastructure may be needed to translate better internet access into enhanced student achievement.



I was spending 6,000 per month on internet but now I only spend 1,500, and also the internet has almost become a basic need, so, yes the quality of my life has changed.

poa! Internet user

Company overview

poa! Internet provides wireless broadband in low-income and rural communities in Kenya. The service is delivered through a Wi-Fi network, and this technology has allowed poa! Internet to bring more affordable internet access to underserved individuals and small businesses. poa! offers both public “street” internet access and internet to the home and small businesses.

Customers receive unlimited data packages, free content and access to online services such as job boards and marketplaces. poa! has also provides free internet access to selected community institutions, including schools, in return for these facilities hosting the infrastructure used to provide the street service.

Poa International Limited is a portfolio company of Novastar, a venture catalyst firm that has received investment from the CDC Impact Fund and the European Investment Bank’s Impact Financing Envelope.

poa! Internet

Research focus

Information and communications technology (ICT) can have a positive impact on the lives of individuals and can help accelerate economic and social development. Yet 4.4 billion people around the world are still unconnected and many more are poorly served.

poa! aims to provide fast, affordable and unlimited access to the internet to underserved communities. In East Africa, low-income and rural populations face particular barriers to accessing the internet. Even where people are able to overcome the prohibitive costs of mobile data to afford the service, they often face a poor user experience, relying on a slow 2G service or limited amounts of 3G/4G.

Wi-Fi technology can reduce the cost of providing mobile data coverage, making it possible to increase affordability. This allows poa! Internet to offer internet packages at lower prices than leading cellular operators and to make its service available in places which other technologies can't reach or which operators have chosen not to serve.

In 2017, poa! Internet launched a new home service and was keen to understand how access to internet was affecting early adopters of the product, and the potential to expand the service to peri-rural areas. At the same time, poa! is considering how to develop its street internet service and wanted to understand the impact it has on schools hosting Wi-Fi infrastructure.

This involved carrying out research in two stages. The first used Acumen Lean Data to explore customer feedback and satisfaction with the poa! home service. The second investigated the effect of poa! Internet on ICT uptake and usage in schools. This research component was led by a Fellow under an EIB – Global Development Network Joint Programme. The study involved:

- A phone survey with a representative sample of 312 poa! Internet home broadband customers
- A survey of school authorities and students in 18 schools in Nairobi and Kiambu Counties, split into a two groups treatment schools (those with a poa! Internet connection) and control schools (those without a poa! Internet connection).

Research was conducted over a six-month period from January to July 2018.

Research findings

Part One: Home broadband

Users of reliable and affordable internet access at home see an improvement in their quality of life

- Over half of poa! Internet home broadband users (56%) say that their quality of life has “very much improved” because of poa!. A further 31% say that it has “slightly improved”. The main improvements that respondents listed are reduced expenditure on accessing internet (30%), and improved reliability of internet access, enabling them to work or study from home (29%).
- The unlimited poa! Internet home broadband service was seen as a superior alternative to purchasing data bundles or going to cyber cafes.

Internet access improves perceptions of connectivity

- When asked about how poa! Internet is affecting users across various impact related dimensions, “informed about the world” and having “access to information” were rated as the most important effects. Customers also scored poa! highly in the dimensions of providing entertainment and generating income.

>56%

Over half of poa! Home broadband users say that their quality of life has “very much improved” because of poa!



Yes, the world has become closer to my home. I access internet both at home and workplace, I am now more informed.

poa! Internet user

poa! Internet

Part Two: Wi-Fi services

poa! in schools improves access to information and increases the likelihood of regular internet use

- The students appreciated improved internet availability (reported by 60% of students), improved access to information (51%) and improvements in the availability of teaching and learning materials (44%). Students in schools receiving poa! internet are 29% more likely than students at non-participating schools to use internet daily, 39% more likely to report receiving internet training during school hours and 40% more likely to receive online educational content. The analysis underlying these results controlled for age and basic household characteristics, but the differences may reflect other differences between the two groups.

But internet use remains limited, and no impact can be traced on student achievement

- Despite increased access to ICT resources, this has yet to translate into changes in the classroom. Only 1 in 5 students reported an increased use of the internet as a teaching and learning resource, and fewer than 1 in 10 reported the use of online courses. The study found no evidence that provision of poa! internet had increased the probability that students received educational internet content at school. Nor were they more likely to report improved general ICT-related skills and knowledge.

The real impact of poa! Internet may be under-stated

- Internet infrastructure primarily drives impact through enabling human capital, economic and social development across an economy. These changes cannot be captured through surveys alone. For example, while customers may experience some immediate cost-savings and a productivity boost, the impact on entrepreneurship, skills, and employment will only materialise in the medium term.
- The research in the schools revealed a high level of enthusiasm amongst students and school authorities. However, the full benefit of improved internet access can only be felt if appropriate hardware and capacity is in place. Students need access to computers or other devices if they are to access the internet as a learning tool – the research showed that currently many can access only for a few minutes at breaktimes or after class – and teachers need to be trained in how to make use of the internet for educational purposes. Furthermore, the school management need the appropriate capacity to keep an ICT system functioning.

60%

of students in poa! schools reported improved internet availability



poa! Internet is used to undertake research in all subjects. ICT including the Internet is used by students to undertake project work. Students use the Internet in order to get high scores/marks during examinations both at school and national levels. poa! Internet is cheap and fast.

Educators in schools using poa!

poa! Internet

What happened next?

These findings gave poa! new insights into their customers, their preferred content, and the ways in which the company could improve their home and street services.

poa! Internet is currently expanding the number of Wi-Fi hotspots to improve coverage of the poa! Internet street service. This will reduce the need to partner with schools to host their infrastructure. Poa! Internet management is seeking ways to continue developing its schools service, potentially involving partnerships with NGOs and others philanthropic organizations. Such partnerships could make it possible, in addition to providing free Wi-Fi, to cover some of the ICT infrastructure and capacity needs of the schools. This could catalyse an even greater impact for schools and students in these underserved communities.



At the rate at which the world is changing with technology... you risk being left behind. It has generally made life easy and enjoyable.

poa! Internet user

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