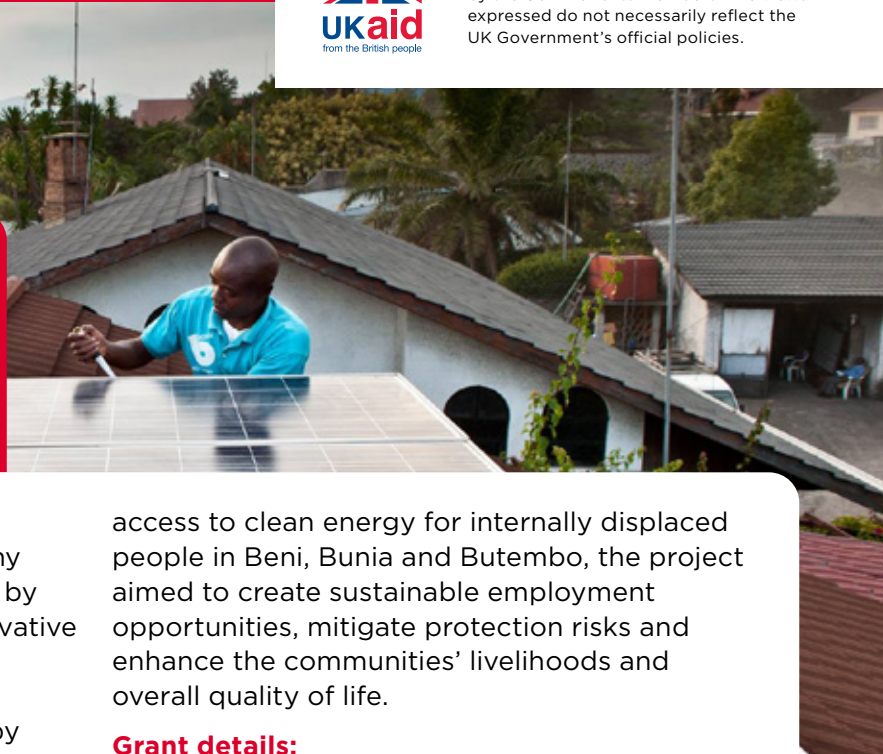




Bboxx: Project lessons and outcomes



Grantee:

Bboxx is a data-driven technology company that transforms lives and unlocks potential by connecting consumers and deploying innovative products across Africa. Their mission is to champion the economic empowerment of households, communities and businesses by creating new markets and accelerating their transition to the digital economy.

Project:

Bboxx design, manufacture and finance decentralised energy solutions and have been distributing solar home system (SHS) pay-as-you-go (PAYG) devices in the Democratic Republic of the Congo (DRC) since 2017. Bboxx received a grant from the GSMA Mobile for Humanitarian Innovation Fund to scale up their operations to include three new cities in addition to the 15 already covered. By providing

access to clean energy for internally displaced people in Beni, Bunia and Butembo, the project aimed to create sustainable employment opportunities, mitigate protection risks and enhance the communities' livelihoods and overall quality of life.

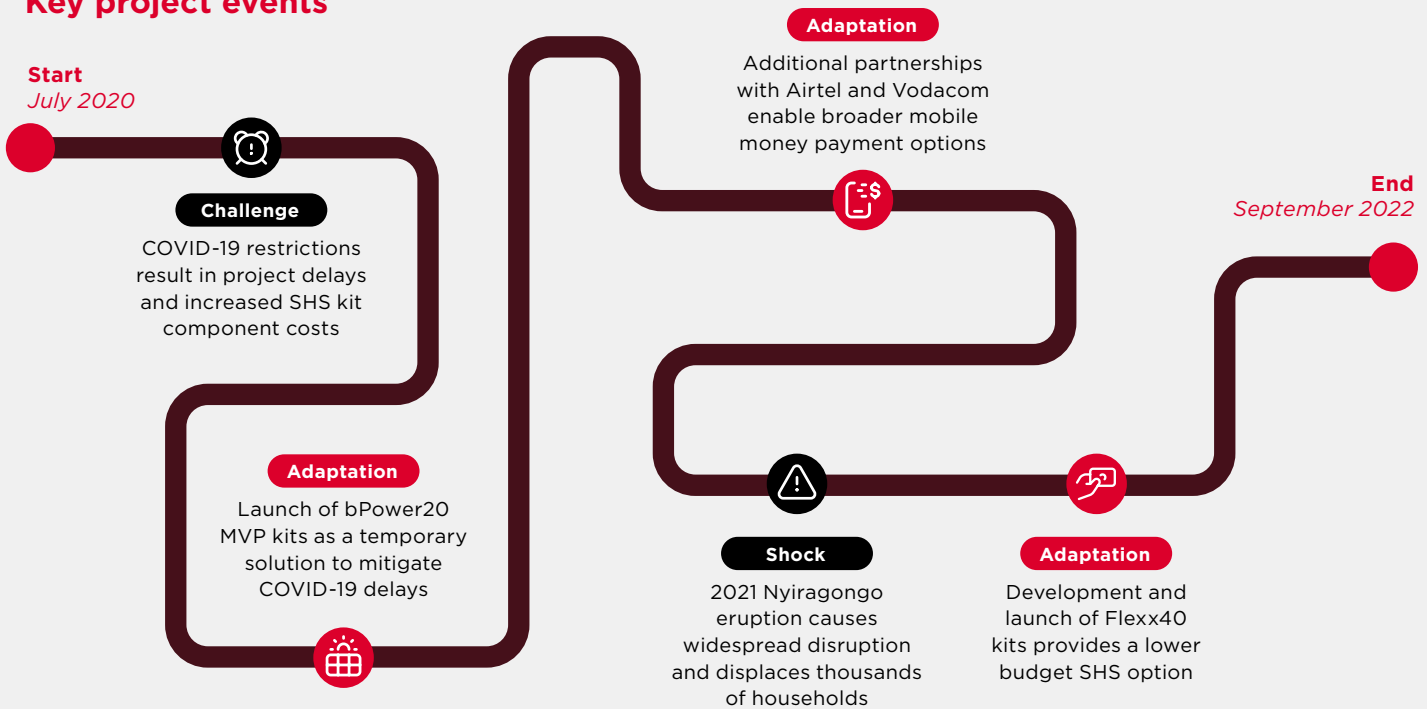
Grant details:

- July 2020 to September 2022
- Mobile for Humanitarian Innovation Fund grant of £127,000

Partners:

Danish Refugee Council to advise on mainstreaming humanitarian principles and operating safely in these complex regions, as well as leading the monitoring and evaluation of the project. Orange DRC as mobile network operator (MNO) partner to facilitate mobile money payments and the Bboxx call centre.

Grant timeline: Key project events



Project background

The regions of Grand Nord and Ituri in the DRC have been at the centre of multiple humanitarian crises which have led to the internal displacement of hundreds of thousands of people, many of whom are living with host families. Bboxx partnered with the Danish Refugee Council and, with the support of the GSMA, aimed to expand their affordable SHS PAYG operations to the urban areas of Beni, Bunia and Butembo. The project set out to establish a network of shops and points of sale in communities with high numbers of internally displaced persons (IDPs) while mainstreaming humanitarian principles and operating safely in these complex regions. The intention was for all project systems to be mobile-enabled and remotely monitored by the Bboxx Pulse platform, and for all payments to be made digitally through a partnership with Orange Money.

Project timeline details



COVID-19 restrictions

National lockdowns and international supply chain issues prevented Bboxx from launching the project as originally planned. Reliance on manufacturers in China and delayed shipments to the DRC meant it was not possible to receive enough stock of necessary components for Bboxx's bPower kits. Local movement restrictions made it difficult to move goods around the country and made in-person sales and marketing activities problematic. Increased shipping costs and a global shortage of microprocessor units also resulted in higher overall production costs per unit and reduced the potential for profit margins on each kit sold.



Launch of temporary bPower20 MVP kits

Bboxx began opening shops and recruiting staff to commence operations in Beni and Butembo in October 2020 and January 2021, respectively. They launched bPower20 MVP as a minimum viable product (MVP) and a temporary solution to introduce Bboxx products to the market while waiting on adequate stock of their original bPower50 and bPower20 kits from China. The bPower20 MVP kits contained the same light bulb set, solar panel and torch as the original kits but a different lead-acid battery was included.



New MNO partnerships enable alternative mobile money options

One of the project aims was for all payments to be made through Bboxx Pulse, their integrated operating system that facilitates PAYG plans and allows customers to pay for their SHS through mobile money. Bboxx initially partnered with Orange DRC to integrate Orange Money and enable customers to make monthly payments using Orange Money mobile services. However, although widely used in the target regions, the project staff quickly realised that many customers were also using other mobile money systems. Bboxx consequently decided to form additional partnerships with Airtel and Vodacom to incorporate their mobile money systems into the Pulse platform too.



2021 Nyiragongo volcano eruption

In May 2021, the Nyiragongo volcano erupted 16 kilometres from the city of Goma. At least 31 people lost their lives, 41 people were reported missing, and more than 4,500 households were displaced. To help customers following the eruption, Bboxx switched on all SHS in and around Goma free of charge for 10 days, giving 40,000 people access to emergency power. Phone-charging stations were also installed at four shops, welcoming displaced people from the surrounding area to recharge their phones free of charge. Bboxx also quickly put in place a plan to help their staff, advancing salary payments and providing emergency cash transfers where needed. Bboxx’s headquarters and call centre were temporarily relocated to Bukavu to ensure continued service to the rest of the country.



Launch of Flexx40 SHS kits

Customer surveys identified high perceived costs of the bPower kits as the main barrier facing potential customers looking for SHS systems. Rising production costs combined with low disposable income among the target market resulted in Bboxx exploring opportunities to offer a new lower budget SHS product. Their simplified Flexx40 kit was developed to provide lighting and mobile phone charging at a lower overall price point, using components with more reliable supply chains. This lower budget option was launched in May 2022 to widen the customer base and make SHS more accessible in Beni, Bunia and Butembo.



End of the grant

During the grant period, the project:



Sold 7,290 SHS kits overall



Developed and launched

the new Flexx40 budget SHS kit, selling 1,047 Flexx40 kits in the first five months following launch



Created 91 new jobs

including retail supervisors, shop managers, sales agents and technicians

Project outcomes

Outcome

Improved living conditions for Bboxx SHS users

A post-project survey of Bboxx customers in Beni¹ found that they primarily used their SHS for lighting, powering appliances and charging mobile phones. Improved lighting enabled customers to continue various activities at night, such as housework and studying. Potential health benefits enjoyed by customers included not using charcoal or gas in the house, and children not having to do their homework by the fire. Feedback from customers praised the quality of the Bboxx SHS, with many finding the lighting to be brighter and longer-lasting than alternatives. Television and radio were also found to be valued forms of entertainment for children and adults alike. Some parents also explained that entertainment powered by their SHS helped prevent their children from roaming around their neighbourhoods at night. Additionally, the ability to charge mobile phones in the comfort of their homes gave some customers peace of mind as they no longer worried about them being stolen at a charging stations.

"We try to encourage our children to stay home in the evenings so they keep out of trouble but it's not always easy! Having a solar home system has had a positive impact for us because instead of walking around aimlessly at night, they are happy to stay home and watch television, so I am not always worrying about their whereabouts."

- Male Bboxx customer, Beni

Outcome

Economic benefits for Bboxx SHS users

The most beneficial economic impact experienced by Bboxx customers in Beni was saving money on the cost of Bboxx SHS compared to alternative home energy options. This was complemented by the travel cost and time savings from no longer having to regularly leave their homes to buy alternative energy products. Although only a minority of customers reported using the SHS for their businesses, those that did also found it to be cheaper than alternative energy options, and in some cases enabled them to keep their businesses open for longer at night. Some Bboxx customers also reported that they were able to earn additional income by charging others to recharge their mobile phones and other devices using their SHS.

"I have been a Bboxx customer for over two years now and the system has definitely been beneficial for my family. I have one kit in my house where I live with my five children and another at my place of business. We can all now study and work until much later in the evenings unlike before when it got too dark."

- Female Bboxx customer, Beni

1. Data collection was only conducted in Beni due to security constraints in the other locations. The Danish Refugee Council conducted an endline evaluation in Beni involving a quantitative survey of 255 customers (89 women and 166 men) and nine focus group discussions (FGDs). FGDs included 114 participants overall (43 women and 71 men) and were split by: one FGD with Bboxx employees, two FGDs with Flexx40 customers, and six FGDs with bPower 50 and 20 customers.

Outcome

Sustainable employment opportunities and mainstreaming humanitarian principles

The project has employed 91 people (14 in Beni, 61 in Bunia and 16 in Butembo) including 57 sales agents, 22 technicians and 12 other members of staff. The majority of employees surveyed indicated that Bboxx is their only source of income, and reported that they primarily use their earnings to cover household expenses such as rent, as well as school fees for their children. Through their partnership with the Danish Refugee Council, face-to-face and online 'protection workshops' were also held to promote humanitarian principles, educate staff on gender-based violence and operating safely in complex contexts. Thanks to their experience with IDPs in eastern DRC, the Danish Refugee Council was able to share their unique insights regarding humanitarian best practice when working in the region. Through their 'Moseka' project, Bboxx are now even more committed to promoting women in technical roles in their workforce; a historically male-dominated environment in the DRC.

Outcome

Strengthened use of mobile money

Mobile money is a critical aspect of the Bboxx business model as it is the only way customers can pay for their SHS. While the majority of customers in Beni reported that they were already using mobile money, 24% reported that they started using it specifically to enable their Bboxx transactions. Customers reported that making payments remotely through mobile money was more convenient because it allowed them to pay instantly, from anywhere and at any time. This saved transport costs as they did not have to make physical trips to make deposits, and was also considered safer as payments made directly to Bboxx removed any risk of fraud by dishonest agents. Reminders for upcoming payments and digital payment receipts were found to be useful benefits of payments made through the Bboxx Pulse platform. A survey of customers at the end of the project found that only 35% used Orange Money, whereas 65% preferred to use Vodacom or Airtel. By expanding their partnerships and incorporating these new MNO services into their Pulse platform, Bboxx were able to make their SHS more inclusive to the communities they were targeting. This meant that more customers could continue to make payments during COVID-19 related lockdowns and when faced with wider conflict-related movement restrictions.

"Since subscribing to the Bboxx service, I am delighted to be able to better understand the use of mobile money services. My husband bought this product for the family, but it is via my SIM card that all payments are made. This was a real breath of fresh air during the COVID lockdowns, as despite the restriction of movements, mobile money transactions could continue."

- Female Bboxx customer, Beni

Project lessons

Lesson

The importance of quality products for brand reputation

The main reason customers gave for subscribing to Bboxx was their perception that the company provided good quality SHS products (61%). Bboxx launched their bPower20 MVP as a temporary solution to introduce Bboxx products to the market while waiting on adequate stock of their original bPower kits. However, after launch they discovered that the new batteries supplied with the temporary kits were lower quality than expected. This hampered customer satisfaction

and damaged Bboxx's reputation, which then had to be proactively restored. As well as affecting perceptions around value for money, some potential customers voiced concerns about quality as inadequate SHS might damage their valuable appliances. On reflection, the project team decided that it might have been better to delay the launch and wait for the more reliable batteries, avoiding the potential for any reputational damage.

Lesson

Ensuring community understanding and acceptance

As Bboxx SHS products were new to the markets in Beni, Bunia and Butembo, they required specific strategies to encourage community acceptance and buy-in. The baseline survey² in Beni found that Bboxx customers accounted for only 10% of the market at the start of the project. Additionally, as they were looking to enter established SHS markets, they would have to compete with existing brands and products in each market. To increase product penetration, the project team adopted two main strategies to promote

community buy-in. The first was by creating relationships with influential community leaders and members. These members were invited to visit Bboxx shops where the products were demonstrated so that they could vouch for the quality and reliability of the SHS to the wider community. The second involved recruiting staff from the area who spoke the local languages, improving the sales process and instilling trust in the brand. By the time of the midline survey, only five months later they had successfully doubled their market share in Beni to 20%.

2. The Danish Refugee Council conducted baseline and midline surveys using random sampling of 1,425 respondents in Beni in June 2021 and 1,317 in October 2021 respectively.

Conclusion

The main aim of this project was to provide access to clean energy to communities with high concentrations of IDPs in the DRC. Although data collection was only conducted in Beni due to security constraints in Bunia and Butembo, Bboxx have proved that they are able to successfully operate across the three locations, and that there is a customer base who are willing and able to buy and maintain the monthly payments for their SHS. In Beni, access to Bboxx products has resulted in sustainable employment opportunities, improved living conditions, and strengthening the communities' overall use of mobile money. Bboxx's commitment to providing access to

reliable clean energy remained steadfast despite facing challenges including disruptions caused by the COVID-19 pandemic, the Nyiragongo volcanic eruption and ongoing armed conflicts throughout the regions. Their digital platform Bboxx Pulse and focus on payments through mobile money contributed to their ability to operate in these areas. Furthermore, the project's ability to make various adaptations, such as incorporating Airtel and Vodacom into their payment system and the introduction of their budget Flexx40 kit, demonstrates the importance of their customer-centric approach.

What's next for BBOXX?

Since the end of the project, the Flexx40 SHS has continued to be one of the bestselling Bboxx products and is now available in all 19 Bboxx shops across the country. The more flexible SHS, which is easy for customers to use, is now providing more low-income households with access to clean, affordable energy across the DRC. Key learnings from this project have improved various activities including marketing strategies, pre-sales product preparation and after-sales servicing. Jobs are still being created for sales agents, technicians and other members of staff across Beni, Bunia and Butembo. Bboxx have also launched operations in more remote areas in the northern provinces of the country, and have ongoing plans for expansions in Western and Central DRC. As Bboxx's popularity and market penetration continues to grow more inclusive, employment opportunities will continue to be created in these regions. The process of formalising the partnerships with Airtel and Vodacom is also still underway and the team is keen to capitalise on opportunities to work with MNOs in the future. Mobile money is now recognised as a critical aspect of their business model and working with the right partners will continue to be a priority moving forwards.



Data sources

- Project milestone reporting and final grant report
- External MEL report by The Research People
- Danish Refugee Council endline report