



**Mobile Power: Innovation in Battery
Storage for multiple uses in Sierra Leone**
(Project number: 40746)

Innovate UK Energy Catalyst Round 7

End of grant report

21 July 2022



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1. Executive Summary

This Energy Catalyst 7 grant aimed to support Mobile Power's development of electric vehicles and solar-powered batteries, to create a sustainable and scalable business model which supports economic development and empowers local communities.

Trials were conducted in urban and rural areas, and included a partnership with Pink Power, a local NGO aiming to provide alternative livelihoods to former sex workers, and support increased HIV testing and treatment for those still in the sex industry.

This report sets out the findings from development impact monitoring and evaluation conducted by 3B Impact. This focused on how the project has **improved livelihoods** and **standards of living**, especially for women and rural communities, through a commercial business model.

Findings

Mobile Power's trials demonstrated unit economics which will not only support expansion of its electric vehicle rental business on a commercial basis, but also **increase commercial driver earnings by almost 50% while reducing passenger fares by 10%**. This is very promising for local economic development, given the fundamental enabling role of transport.

Progress has also been made in employing female Agents and Area Managers, who now represent 35% and 29%, respectively, of these groups. Female Agents are also earning the same as Male Agents, further confirming the success of their employment both to Mobile Power and local communities.

Switching to renewable energy is imperative in countries with high reliance on fossil fuels, not just in terms of climate change but also due to the volatility of petrol prices. Shortly after the data collection for unit economics calculations, petrol prices went up by 50% in Sierra Leone, further increasing the comparative savings offered by Mobile Power. The impact of such price volatility is especially felt by the poor, for whom increased costs mean food can become unaffordable.

Local communities are empowered by the new local job opportunities created by Mobile Power. Women employed as Agents and commercial drivers (in partnership with Pink Power) are able to access high-quality work and training for the first time in their lives, and report increased **independence and personal growth**.

In addition to driving social inclusion by employing women, which continues to provide valuable impetus in addressing gender inequality, Mobile Power has also identified the potential to **employ persons with disabilities as electric vehicle drivers**, due to their simplified controls compared to petrol vehicles. With one disabled driver having already taken part in the trials, there is good promise for future inclusion of this highly marginalised group.

By scaling up its innovations, Mobile Power can become a key force for environmentally responsible socio-economic development, and make a significant contribution to the development challenges related to access to energy, transportation, and social inclusion.

2. Introduction

With the help of Energy Catalyst funding, Mobile Power (MP) is developing solar-powered electric vehicles and charging infrastructure, and creating a business model which will **reduce fossil-fuel reliance** and exposure to the volatility of petrol prices for the poorest in Africa. Trials to date show that MP'S e-bike business model **increases commercial motorbike driver earnings by 47.5%**, while **reducing passenger fares by 10%**.

By facilitating access to markets and services through lower transportation costs and better availability, the scale-up of this model has the potential to drive development and improve quality of life, especially in rural communities.

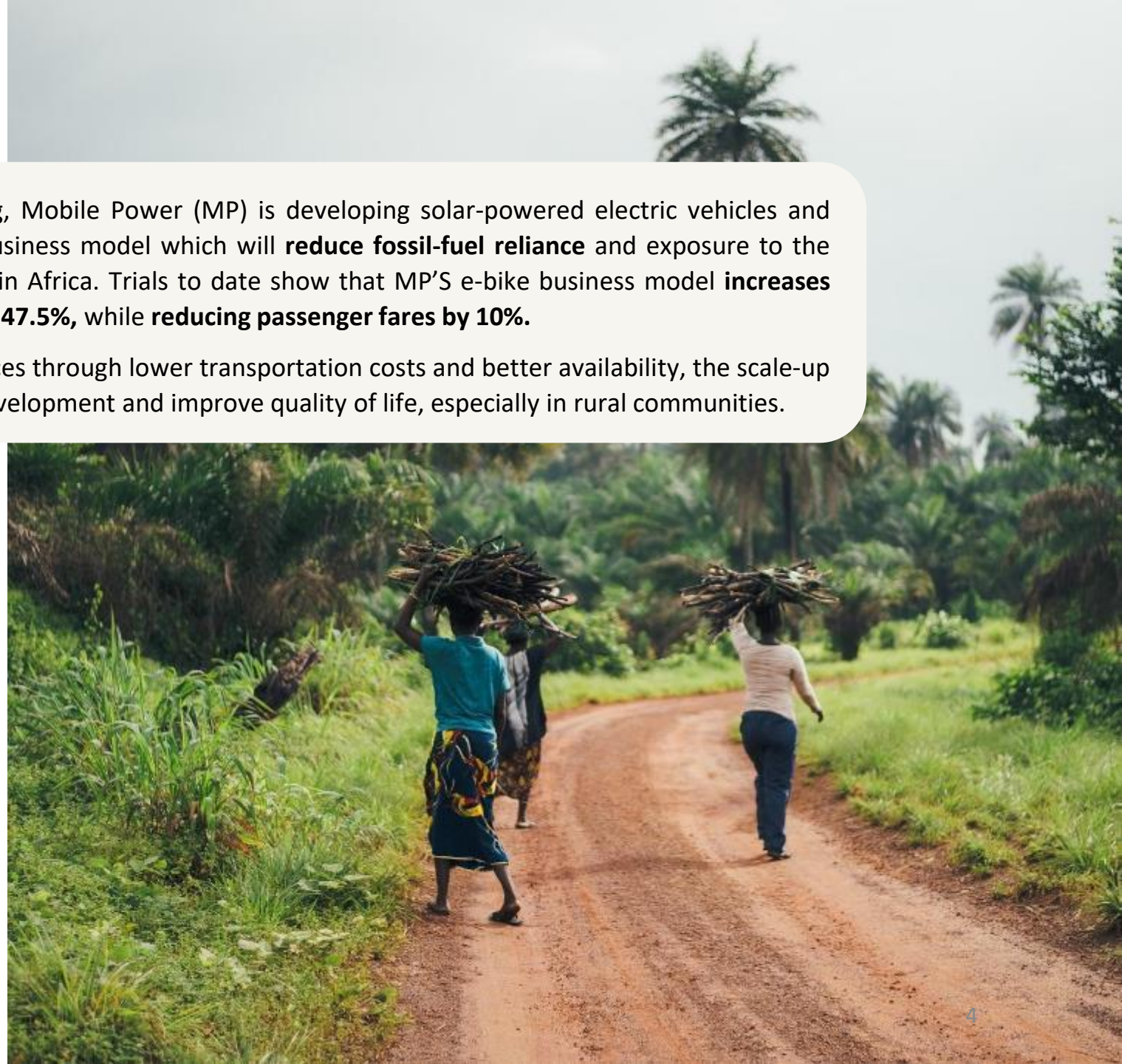
2.1 Context

Sierra Leone remains one of the poorest countries in the world. In 2020, it ranked 182 out of 187 in the Human Development Index[1]. Eleven years of civil war and the successive epidemics of Ebola and COVID-19 exposed and exacerbated weaknesses in the country's social, economic and physical structures.

Major socio-economic challenges in Sierra Leone include the high level of unemployment, especially amongst youth and women, and sharp increases in the price of basic commodities, which went up 18% in 2021[2], and petrol, which increased by 80% in the first six months of 2022.

[1] 2020 Human Development Report

[2]. Statistics Sierra Leone, *CONSUMER PRICE INDEX DECEMBER 2021, January 2022*





2.2 Methodology and sources

To understand the impact of Mobile Power's activities on **improving livelihoods** and **standards of living**, especially **for the poorest**, and **increasing women's access to business opportunities** in Sierra Leone (key research objectives), we:

- conducted interviews with Mobile Power management, team members and Agents, and Pink Power (partner organisation) management
- analysed data from the Mobile Power Dashboard
- reviewed World Hope International training reports for Mobile Power, and Agent interviews carried out by the Gender Officer, as well as Okada driver interviews carried out by Mobile Power
- reviewed recent relevant publications from academics, international institutions and governments.

Agent interviews

Through our partnership with the University of Makeni we conducted 11 interviews with Mobile Power Agents between April and June 2022. Consent was obtained before interviews and they were conducted in local languages to facilitate communication, and translated into English by the interviewers for analysis.

Five hubs we selected to provide representation of hubs with different gender composition (all female, all male, mixed): Matru, Zimmi, Masingbi, Buedu and Kamakwie. The aim was to assess Agents' experience and gender dynamics from a qualitative perspective.

3. Detailed findings

Our detailed findings are organised according to our research objectives, framed through the overriding aim of developing a commercial business model with the potential to scale up across Africa. Our findings are set out in the following four areas.

3.1 A scalable business model which reaches the poorest

3.2 Improved livelihoods

3.3 Empowering women

3.4 Wider development impacts

Qualitative case studies of Agents, based on interviews carried out by 3B Impact and World Hope International are presented throughout the report (see Stories of Change). An overview of the Agent cohort interviewed by 3B Impact is set out in section 3.2.





STORIES OF HOPE

“The money I earn as an Agent is extremely important to me. We are all seeking independence because when you rely on someone, you never know when they will say enough is enough.”

Hawanatu is a 21-year-old bright and energetic young woman who enjoys the recognition brought by being a Mobile Power Agent. Since becoming an Agent, Hawanatu feels more respected and valued within the community. She takes pride in making donations or helping her friends access loans thanks to her Mobile Power earnings.

“I am just coming from the young women's meeting, where I donated Le 50,000. It turned out to be the biggest donation. It makes me pleased with how far I've come.”

She has been taking care of her family since becoming an Agent, providing them with food, shelter and medical care. Her mother has been blind for nearly two decades, and Hawanatu is using her savings to pay for her care.

Hawanatu invested part of her Mobile Power income into developing a business selling food and women's garments, to increase her earnings and be able to save more.

“I don't think it would have been possible for me [to start a business without Mobile Power]. I am just a small girl, who would given me that amount to start a business? My mum is blind and my boyfriend more broke than me.”

Working as a female Agent can be challenging, sometimes facing clients' unfriendly comments and behaviour, but Hawanatu is feeling very positive about her future. She is “confident that there is light at the end of the tunnel”.

“Being an independent woman is the ultimate objective for me.”

STORIES OF HOPE

"It's difficult to fight for food and shelter at the same time. I never imagined that I could create a tiny house for myself and my children, but now I'm considering it."

Morison is a father of two dreaming of building a house for his family. As a single parent, for years he struggled to provide for his two children. Becoming a Mobile Power Agent has been life-changing. Morison feels more respected within the community, has gained self-confidence and no longer feels dependent on other people to take care of his family. He takes great pride in being able to feed his children and be financially independent thanks to his Mobile Power earnings

"I can take care of my two kids without having to borrow or ask someone for help. My wife left years ago because I couldn't provide for the family, but look at me now, I can save and provide enough food for my kids. I am proud of myself!"

Morison sometimes struggles with clients returning their batteries late, but overall he is grateful to be working for Mobile Power. He talks about how the Mobile Power training he received through the partnership with World Hope International has "really helped [him] greatly" to realise the importance of savings and learning how to budget. He started investing part of his Mobile Power earnings into a side business four months into being an Agent, which provides an additional income. With the money saved since becoming an Agent, he was able to buy land, bringing him one step closer to his dream of building a house for his children.

"I feel that as long as I have access to Mobile Power, I can achieve all of my goals for myself and my family."



3. Detailed findings

3.1 A scalable business model which reaches the poorest

Mobile Power's trials in Bumpé (rural area) and Freetown (urban area) identified unit economics which will not only **support business expansion** in urban and rural areas on a commercial basis, but also **increase commercial driver earnings by 47.5% while reducing passenger fares by 10%**. This is due to the significant fuel savings achieved by switching from petrol to solar power, as well as reductions in maintenance costs. Mobile Power therefore has a fair margin of flexibility to adjust its rental fees if needed, to ensure it can invest in its expansion and operate sustainably at scale, to reach as many people as possible.

To address capital constraints to scale up, Mobile Power has developed a partnership with an African asset financing company to offer an attractive lease-to-own model for drivers. The unit economics for the average driver profile mean drivers will be able to own their e-bikes in 12 to 24 months with no upfront payment needed from the driver, allowing even the poorest to access this business opportunity.

The lease-to-own model not only addresses potential cashflow issues for MP and drivers, but also aligns drivers' incentives with Mobile Power's in looking after the bikes. This responds to an issue identified in the trials, where maintenance was initially higher than expected as drivers did not have an incentive to take care of the bikes. Avoiding poor usage will lead to longer asset life, benefiting both drivers and Mobile Power.



Driving local economic development

Motorbike taxis (Okadas) carry **60 to 95% of all motorised people and freight** transport in rural Sierra Leone[3].

Increasing the affordability of Okadas has significant potential to increase access to services such as higher education and specialised health while reducing the cost of traveling to work or transporting goods both in rural and poor urban areas, improving quality of life and social outcomes.

[3] *Rural Transport Diagnostic Study in Sierra Leone Final report*, Mustapha et al., 2018.

3. Detailed findings

3.2 Improved livelihoods

Drivers

One of the main direct beneficiary groups of Mobile Power’s EV business are the commercial drivers themselves, who previously faced low income and high levels of uncertainty.

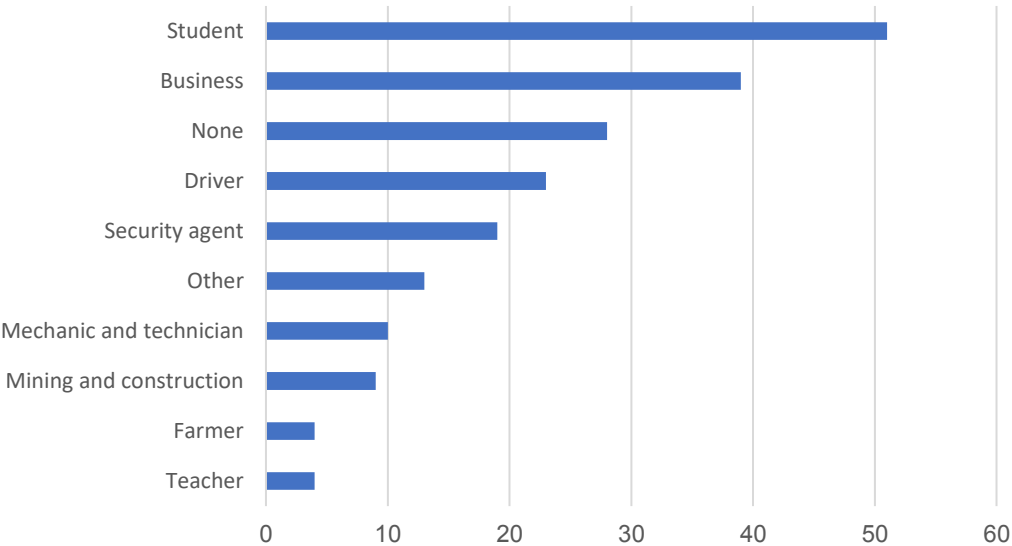
A regional study in Sierra Leone found that 85% of drivers did not complete any formal instruction before starting to drive a motorcycle, and only 11% have a driving license, due to affordability issues[4].

Due to the high fuel costs, Okada drivers have low margins and race to complete as many trips as possible each day, leading to excessive working hours and unsafe driving habits. Fuel shortages further exacerbate this pressure, as they can lead to drivers not being able to work for several days.

Okada drivers are typically men, which was also confirmed by the survey of 200 drivers conducted by MP in Sierra Leone in March 2022. Out of the 200, only one was a woman.

Drivers surveyed were aged between 18 and 56 years old (median: 30 years of age). Most were previously students, goods traders, drivers (of other vehicles), or unemployed.

What was your last job before being an Okada driver?



It is also worth noting that 6% of the drivers surveyed by MP were child soldiers in the civil war. In 2002, at the end of the war, they would have represented 0.14% of the population[5], confirming findings from other studies that highlight commercial driving as an important source of livelihood for this marginalized group[6].

[4] *The factors Associated with the Occurrence of Road Traffic Accidents among Commercial Motorcycle Riders in Kenema City, Eastern Sierra Leone*, Sahr et al., 2020, p. 5-6.

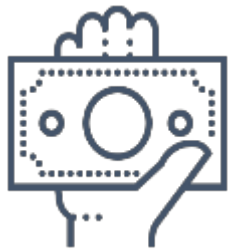
[5] 6,845 child soldiers were demobilised by the end of the disarmament process in 2002 ([UNICEF, Disarmament, Demobilisation and Reintegration of Children: Lessons learned in Sierra Leone, 2005](#)), out of a population of [about 4.9 million people at the time](#). $6,845/4,965,770 = 0.0014$.

[6] *Youth Reintegration, Power, and Okada Riding in Post-war Sierra Leone*, A. Buccitelli and M. Denov, 2017, p. 129-148.

3. Detailed findings

3.2 Improved livelihoods (cont.)

Mobile Power's field trials found that drivers typically travel 160 km a day, completing 50 passenger trips. With the MP EV, a driver **earns 47.5% more**, due to the lower fuel and maintenance costs, taking home \$6.72 instead of the average \$4.25 profit when driving a petrol bike.



47.5%

Increase in drivers' income

MP's use of solar power also protects drivers and passengers from fuel price volatility and availability, leading to **more reliable income streams**. Drivers will no longer be unable to work due to periodic lack of fuel, or because fuel price make transport unaffordable for some passengers.

In terms of asset ownership, MP has applied the learnings from this grant to develop a highly accessible lease-to-own model. MP will require that new drivers complete an initial screening period of three months on a rental basis, important for MP and the asset management company from a risk management perspective. If the driver is approved for leasing (based on their care of the bike and driving behaviours), the rental fees will be converted into the deposit for the lease, removing the up-front costs of the purchase and **making asset ownership a possibility even for the poorest**.

Through their field trials, MP was also able to get a detailed view of the maintenance required for electric compared to petrol bikes. The pictures below show all the spare parts needed for a MP EV versus a petrol bike. MP EVs have a significant advantage, both in terms of number of parts and frequency of repairs needed, indicating they will have a longer life span.



Only the parts in the red boxes are not needed for petrol bikes

Petrol bikes require all the additional parts shown below.



Offering vehicles of higher quality and durability, MP EV drivers should therefore also see a significant improvement to their **longer-term livelihoods**.

3. Detailed findings

3.2 Improved livelihoods (cont.)

Traders and farmers

The solar electricity used to power MP EV batteries provides an affordable, safe and reliable source of energy, resulting in lower, more stable transportation costs.

This makes a significant difference to rural farmers and traders whose income fluctuates with the price of petrol, as they regularly have to cut their already low margins to absorb unexpected increases in transportation costs.



10%
*reduction in
passenger rates*

Consumers

3B Impact's previous research for MP[7] found that increases in the price of transport are also transferred to the price of goods, directly reducing consumers' buying power.

The trial funded by this grant has indicated that MP will likely need to create active measures to ensure some of the savings achieved are passed on to customers. This will be done through the passenger App, guaranteeing a 10% reduction in the rates passengers will be charged.

By offering lower and more stable transportation costs at scale, MP EVs have the potential to create the market forces needed to reduce the cost of goods while increasing margins for both drivers and producers.



STORIES OF HOPE

"Prior to becoming an Agent, I almost decided to attempt to cross the Mediterranean Sea to get to Italy. Now that I have this job [with Mobile Power] I'm able to calm my mind and forget about leaving the country."

Fatmata, a proud and independent 18-year-old woman, is thrilled to be her own boss and provide for her family. For years, she dreamed of following her friends who travelled to Europe with the hope of finding a better future. Despite being conscious of the risks of the journey, she was "prepared to die trying".

Since becoming a Mobile Power Agent, Fatmata's prospects have drastically changed. Four months after starting with Mobile Power, she launched her own business selling garments on credit, complementing her work as a Mobile Power Agent. Her combined earnings help her provide for herself and her family.

Fatmata's confidence has grown working as an Agent, and she feels more respected within her community. She enjoys the independence that being a business owner gives her.

"Now that I have my own business, I get to decide what should happen and when it should happen. It's nice to have that level of control."

Fatmata is no longer thinking about leaving her country. She is now focused on developing her business and has taken the West Africa Senior Secondary School Examination with the hope of completing her education. Now that she is able to save more than half of her earnings, Fatmata feels more positive about the future.

"I now have reason to believe that brighter days are ahead."



STORIES OF HOPE



“MP has given me a reason to be cheerful once more. I am happy and all smiles to my friends and clients now that I have a job and have the autonomy to afford things.”

Alie is a 24-year-old man who is strongly committed to his family, especially his siblings, who he has been taking care of since their parents passed away. His earnings as an Agent allow him to provide for them and ensure their wellbeing.

“Both my parents have passed away, and it is up to me to carry the weight of obligations toward my siblings. We have only been able to keep ourselves alive because of MP. The money I earn from MP is essential for us.”

Now that he is working as an Agent, he feels more respected within his community, which makes him proud.

“It feels fantastic to be recognised and acknowledged within the municipality because I now have a job.”

Despite initially facing issues with learning how to use the MP App and needing more batteries to meet local demand, he is satisfied with his work at MP. He is particularly grateful for the Mobile Power training delivered by World Hope International, where he learned how to use MP equipment and budget to save money.

“The training has genuinely helped me develop my skills and enabled me to work more effectively. I can use the MP tool and figure out profit margins and savings. This has significantly improved my life.”

Like everyone around him, Alie has been significantly impacted by the increased cost of living, but he remains optimistic that his life will get better.

“I will only realise my full potential through MP and I am coming closer to it every day.”

3. Detailed findings

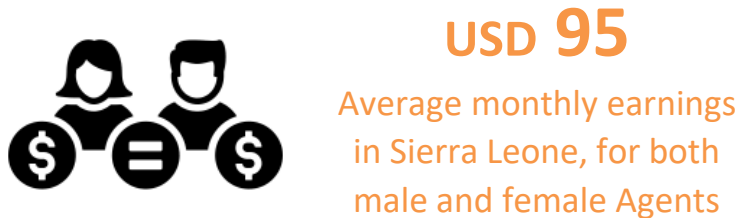
3.2 Improved livelihoods (cont.)

Agents

Another key direct beneficiary group of Mobile Power's business model is its Agents, who were most often previously unemployed.

MP currently employs 506 Agents across 116 solar-powered hubs in Sierra Leone, Nigeria and Liberia.

In Sierra Leone, monthly Agent earnings in 2021 averaged Le 1.25 million (USD 95, at the end of 2021), for both male and female Agents. Our qualitative research indicates that this level of income is leading to significant improvements in both standards of living and future prospects.



To complement our previous research with Agents[8] we conducted interviews with 11 Agents to obtain detailed qualitative views of their experience. We also received in-depth qualitative data from MP's Gender Officer. The 'Stories of Change' throughout this report present our findings.

[8] See Mobile Power EC6 End of grant report, 2021; and more detailed findings in the separate Agent Experience Report, 2021, provided as an Appendix

Overview of findings

As in our previous research, all Agents reported having a positive experience working for MP. They all expressed relief to be able to provide for themselves and their family.

The interviewees spent their Mobile Power earnings on growing their businesses, paying for school fees, covering medical expenses and buying food. Nine out of eleven reported significant improvements in their lives since working for Mobile Power.

Gaining financial independence has boosted Agents' self-confidence, lessened social and financial pressures, and driven a more positive outlook, with all interviewees saying that since becoming an Agent they feel more optimistic about their chances in life.

Working for MP has opened new opportunities for Agents, such as:

- ❖ Launching or developing their own business
- ❖ Further pursuing their education
- ❖ Improving their relationships within the community
- ❖ Enabling them to stay in rural communities.

Female Agents highlighted that they are now able to contribute to their family finances, share responsibilities, and become self-reliant.

Agents also report that Mobile Power has had a positive effect on their local communities, creating new opportunities for all (see section 3.4 Wider Development Impacts).

3. Detailed findings

3.3 Empowering women

Female Agents

Job opportunities are scarce in rural communities, and even more so for women.

Mobile Power challenges entrenched gender roles in Sierra Leone by engaging with men and women in local communities and providing women with employment opportunities previously considered unsuitable to them.

For four of the six women interviewed, their role with Mobile Power was their first ever paid occupation.

Female representation across Mobile Power is steadily growing. 35% of Agents are now women, and nearly 83% of hubs employ at least one woman.

Given that Mobile Power Agents earn by commission, their average income is a robust indicator of their performance.

In 2021, both male and female Agents earned an average of USD 95 per month, indicating that both men and women are performing at the same level of effectiveness.

The female Agents interviewed describe how MP earnings were essential for them to gain responsibilities within their household.

They enjoyed being in control of their own wellbeing and that of their family.

In addition, they continued to report a wide range of changes in their lives since they started working for Mobile Power. They feel more respected, listened to, independent, confident and ambitious, and less stressed by the financial constraints of their household.

Mobile Power has also made significant efforts to employ female Area Managers, with 7 out of 24 in place at the moment.

The main challenge reported by MP management in employing more women as Area Managers relates to ensuring their safety when traveling alone in rural areas.



3. Detailed findings

3.3 Empowering women (cont.)

Agent Training

Mobile Power Agents gain financial autonomy, skills and confidence through their work and the training received through World Hope International, which has continued to be rolled out by MP following the end of the grant funding received to set it up (EC6 grant) due to its value to the business.

In 2020 and 2021, 132 male and female Agents received in-person training from the MP Gender Officer, across 28 hubs in Sierra Leone.

All Agents interviewed rated the training as very useful and confirmed that learning about budgeting and saving money has had a significant positive impact in their lives.

The new competencies they develop are easily transferred into their professional and personal lives. They described how they used this knowledge to save part of their earnings and invest in their education, family wellbeing and small businesses, increasing their asset ownership.



132

Agents trained
(2020 to 2021)



across

28

Sierra Leone hubs



STORIES OF HOPE

A young father of a two-year-old girl, Nyuma is keen to support his family and community. Before working for Mobile Power, he used to feel anxious about daily life expenditures and his lack of financial resources.

"I recall investors showing up five months ago to acquire our family's farm. We agreed not to sell the land, so they went. I wouldn't have been able to persuade [my family not to sell] if it weren't for the job and the money I am getting as [a Mobile Power] Agent."

His income from his job within a big palm oil company was insufficient to cover his expenses. Nyuma talks about how he was living with the fear of his daughter falling ill and being unable to cover her medical expenses.

Since becoming an Agent, he feels more positive about the future. Nyuma says he can now "breathe safely" knowing that his job with Mobile Power allows him to take care of his family.

*"My life has greatly improved.
Both financially and psychologically."*

When investors came to purchase their land for "50 million Leones and a trip to Dubai", he was able to decline and convince his family to stay using his job with Mobile Power as the main argument.

"My family and I rely heavily on the revenue I receive from Mobile Power."

Nyuma is also committed to giving back to his community. He is volunteering as a teacher in one of the local government schools. Thanks to the training received through Mobile Power, he realised the importance of saving money and joined a savings group. The next step for him is to start college, which he is saving up for.

STORIES OF HOPE

*"Before now, getting food to eat
with my husband and children was not easy."*

Princess is a passionate 20-year-old mother of two who is dedicated to her family's wellbeing. In the past, Princess' family struggled to afford food and lived on a day-to-day basis where they could not think about saving money or plan for the future.

She says there has been a real positive difference in her life since joining one of Mobile Power's all-female-managed hubs. Princess can now provide for her family. Even though she "would not say life is perfect", she feels fulfilled to be able to pay for her children's school fees and medication expenses.

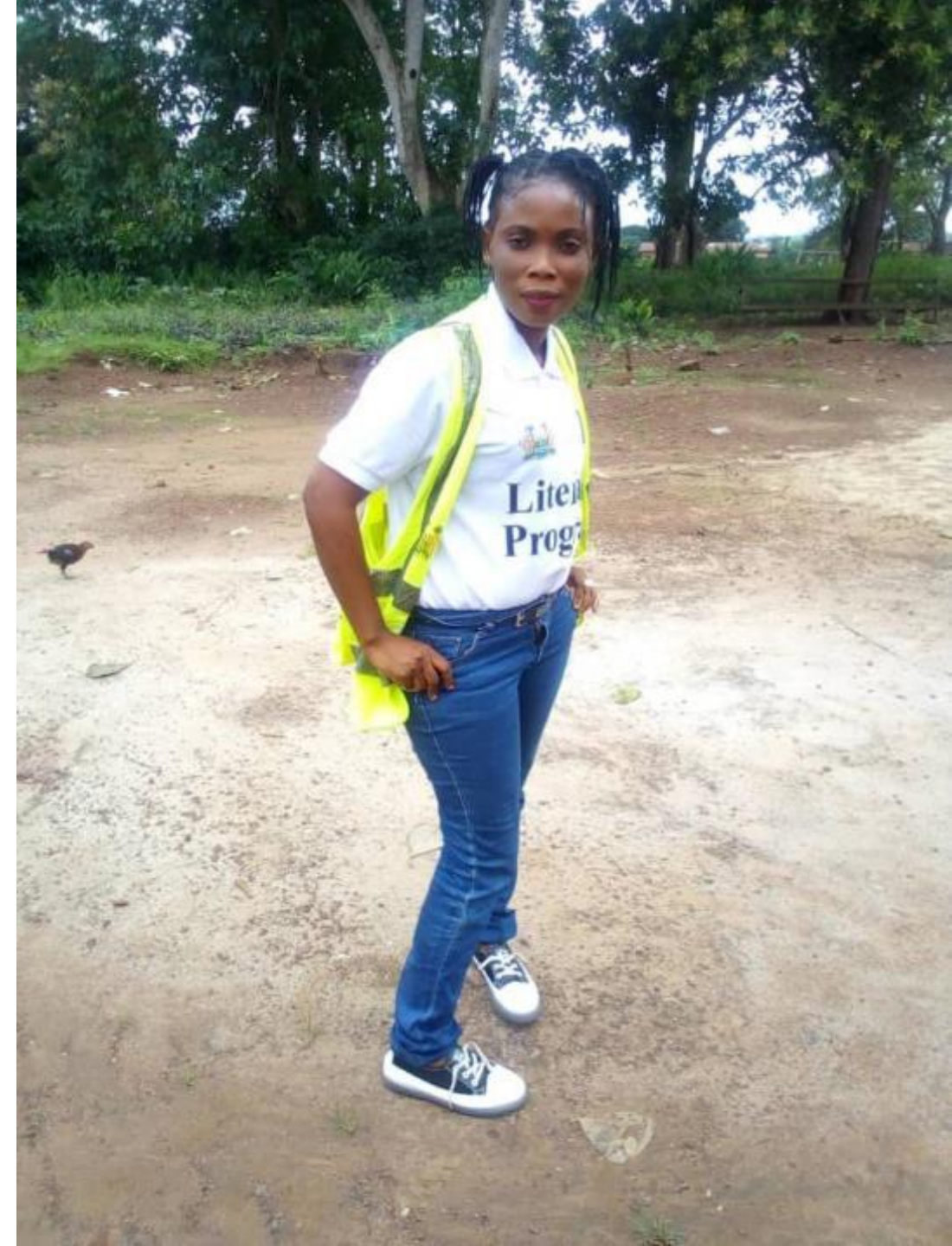
*"Being able to provide for your family is the ultimate goal of every parent.
It makes me feel proud and productive."*

When her four-year-old daughter became ill, part of her income was used to cover her medical expenses. As her health improved, Princess was able to re-allocate money to her savings and invest in developing her own snack business. She is now looking forward to investing to expand this business and completing her secondary education once she can afford it.

"Starting a business wouldn't have been possible before."

Princess is also a satisfied user of Mobile Power batteries. She talks about how access to lighting "enables us to be more connected as a family". Evening gatherings with family and friends are made easier with the MP built-in light.

*"Now you just switch on your [MP] light with your family and friends to
keep company and tell stories until midnight."*





STORIES OF HOPE

“It is difficult to think about launching a business when you've not eaten the whole day.”

22-year-old Emmanuel particularly values his independence. Before working for Mobile Power, he worked as an airtime trader for several years, but his earnings were low and he still needed support from his parents. His job with Mobile Power was the key to his independence and he can now support himself and not only pay for his own school fees, but also save for university.

“I had never had the opportunity or the desire to start my own business [before working for Mobile Power]. Because I never had money, it never occurred to me.”

Drawing on the Mobile Power training received through World Hope International to establish a saving strategy, he was able to raise enough money to set up his own appliances business alongside his work as a Mobile Power Agent, just four months after becoming an Agent. For Emmanuel, his earnings from his job as an Agent opened new opportunities that he had never thought about before, when his main preoccupation was to find affordable food.

“[Working for Mobile Power] has made a significant difference in how I feel about myself. Now I'm more self-assured. I'm no longer afraid to speak up or ask questions.”



STORIES OF HOPE

"It makes me happy to be an Agent.

I'm well-liked in town because it's rare to see a woman my age caring for an entire family."

Fatmata is a creative 21-year-old woman who provides for her family through her Mobile Power earnings. When her father died, her family went through a difficult time, and she worried she would not be able to continue her education. As she started working as a Mobile Power Agent, she became the main provider for her family and regained hope in the future.

"Mobile Power came to my rescue, and I am now in charge of the entire family."

She particularly enjoys working as an Agent as it gives her opportunities to discuss and interact with people every day. While at the moment the work is too time-consuming for her to launch and manage her own business, Fatmata used her earnings and what she learned from Mobile Power and World Hope International training to fund and support her mother's business.

"With the abilities I've gained as an Agent, I've been able to empower myself while simultaneously paying for my own higher education."

Since working for Mobile Power, Fatmata has started studying again. She is currently studying for university exams and now has ambitions to open her own business soon. She believes her life will continue to improve as long as Mobile Power sustains its activities.

"Since being an Agent, I never envisioned my life deteriorating or going backwards. All I can think about right now is accomplishing big things and becoming the woman I want to be."

3. Detailed findings

3.4. Wider development impacts

Tackling inequalities

In our baseline research in the rural community of Mara, the high cost of transport was reported as the main problem people face when using public transport (92% of interviewees). The second most frequent issue was limited availability of transport (73% of interviewees)[11].

Given their lower costs and the removal of financial barriers to asset ownership, MP EVs have the potential to drive down the price of transport services, and increase availability, making it more affordable for rural populations to travel to urban centres, where they can access more social, working and trading opportunities. It will also help ensure a steadier supply of produce to urban areas, which saw the highest increase in poverty rates during the Covid pandemic. This increase in poverty was to a large extent due to the mobility restrictions put in place to contain the virus[12], confirming the importance of increasing the affordability and availability of transport.

Autonomy and wellbeing

Increasing transport accessibility not only unlocks access to wider resources and services, it also helps to reduce the stress caused by high transport costs and contributes to people's wellbeing, especially young adults, whose mental wellbeing is particularly affected by lack of autonomy[13].

Supporting inclusion

MP EVs are more accessible vehicles that can enable some people with physical disabilities to work as drivers and earn a regular income. Mobile Power's oldest driver suffers from a disability caused by polio, which prevents him from switching gears on petrol motorcycles, but he is able to drive the MP EV without problems, creating a rare opportunity for him to earn a living.

[11] 3B Impact MP EC7 Baseline Report, 2020

[12] Sierra Leone 2021 Economic Update, Welfare and Poverty Effects of the COVID-19 Pandemic, World Bank Group

[13] *The role of transport in supporting the autonomy of young adults*, A. Delbosc and D. Vella-Brodrick, 2015, p. 97-105.



3. Detailed findings

3.4. Wider development impacts



[14-15] *The factors Associated with the Occurrence of Road Traffic Accidents among Commercial Motorcycle Riders in Kenema City, Eastern Sierra Leone*, Sahr et al. , 2020

[16] *Sierra Leone explosion: Scores dead after Freetown oil tanker collision*, BBC, 6 November 2021.

Improving community health and safety

A significant proportion of traffic accidents involve motorbikes[14], creating risks not just for drivers and their passengers, but also for the community at large.

With the support of this grant funding, MP has identified the controls and practices it will need to implement when scaling up to mitigate the risks associated with traffic accidents.

In addition to reducing pressure to work long hours by increasing drivers' margins, MP plans to offer its drivers a Welfare Package, consisting of training, helmet, driving licence, health insurance and breakdown service. It also plans to put in place controls such as speed and acceleration limits, as well as a '3-strikes-and-out' policy for speeding and customer complaints, which will be logged through a Passenger App.

These practices are likely to be fundamental to both improving traffic safety and protecting MP assets, given that some studies show that 89% of drivers do not have a license and 85% had not had any formal driver training before starting to ride motorcycles[15].

Poor fuel management in Sierra Leone also presents risks to drivers and the public. In rural areas, fuel is sold in plastic bottles by the road. At least 98 people died in a fuel tanker explosion near a petrol station in Freetown in November 2021, many trying to collect fuel from the leaking tanker following a collision [16].

3. Detailed findings

3.4. Wider development impacts

“We used to be one of the darkest communities in the area. The town was quiet, and people were arguing over missing phones, memory cards, and Bluetooth speakers in all the major telecentres [where they are left to charge for a fee].

People used to pay much more to charge their phones in the past, and we used to see a lot of shoving and quarrelling in all of the large telecentres.

All of this has now come to an end. People may quickly charge their phones and use the [MP battery’s] built-in light to see their way around.”

- Male Agent, Buedu

Improving relationships

Mobile Power batteries help rural communities stay in contact with their relatives and friends. They “hardly ever lose contact now that [their] phones are charged 24 hours a day, seven days a week”.

Mobile Power Agents also noted that lighting has improved socialisation options, allowing people to get together at night to tell stories, listen to music and watch movies.

Improving conditions for education

As highlighted in our previous research, the battery’s built-in light allows students to study in the evening, an important feature which continues to be valued.

“Students can now study and get through the gloomy nights.”

Female Agent from Masingbi hub

Most of the Agents interviewed also started studying since working for Mobile Power, or were saving with the aim of continuing their education, including going to university.



STORIES OF HOPE

“Before, I was a very skinny young lady, but now I have put on weight and I don't look like somebody who is starving.”

Hawa is a young mother of two who married shortly after finishing high school. Being a Mobile Power Agent is her first job, as she was unable to find other opportunities in her village. She feels grateful for being able to work.

“Having a source of income as a woman in this country is not easy.”

Hawa particularly enjoys the financial independence that she gained. She no longer feels like “just a housewife waiting for my husband”. She now contributes to the family income and is excited to share household responsibilities with her husband.

“Now I don't have to wait for my husband to buy food for my kids when they need it. It is exciting that I am able to reduce the responsibilities on his head.”

Thanks to the additional income, she no longer struggles to afford food, and seven months into working for Mobile Power she decided to launch a cold drinks retail business. She is proud to say that by coupling her two professional activities, she is now able to put Le 30,000 (US\$2.29) daily into her life savings.



STORIES OF HOPE

“Being an Agent allows me to be more skilled and productive in my community, which provides me a sense of relief.”

Mando is a determined young man, focused on investing in his future. Being an Agent for Mobile Power is his first paid job as he never had any paid work opportunities in the past. He says his life has greatly improved since he started working as an Agent, and he is especially proud to be able to save more than half of his earnings every month.

Mando recalls a time when local authorities came to arrest his mother as she couldn't pay back a loan she had taken out jointly with a friend for their business, after the friend ran away. Mando had to take the money from his savings to avoid his mother being taken to the police station.

“Since being an Agent, my life has been incredible. Looking back on how my life used to be to where it is today, I have seen a lot of change.”

Since working for Mobile Power, he has been able to use his income to start his own electric appliance retail business, pay his school tuition fees and join a savings group. These changes in his life have helped him feel more confident in what he can achieve and have brought him hope for the future.

“[If it was not for Mobile Power], I don't think starting a business would have been possible . It was difficult for me to pay my West African Senior School Certificate Examination tuition, let alone start a business.”

He particularly values the skills that he has acquired working as a Mobile Power Agent. He learned a lot through the Mobile Power training provided in partnership with World Hope International, including best practices to rent the batteries and the importance of saving part of his income.

“The impact [of joining a saving group] is enormous; simply knowing that you have a certain amount set aside can instill confidence and hope in you.”

4. Recommendations

a) Road safety

MP's plan of offering drivers a Welfare Package (consisting of training, helmet, driving licence, health insurance and breakdown service), as well as putting in place controls on speeding, with a '3-strikes-and-out' policy for unsafe or disrespectful behaviour, is likely to be fundamental to improving road safety, ensuring client satisfaction and protecting MP assets, which is important to the company's financial viability and scale up. Safer drivers may also attract more custom. It could become a major strategic advantage to MP.

MP should seek to capture data on its safety rates, for example tracking:

- Number and rate of hard stops (a proxy for number of accidents)
- Number and rate of sharp decelerations (a proxy for near misses)
- Number and rate of speeding infractions.

This will also help build a business case for governments concerned with the increased rates of accidents resulting from the greater number of motorcycles on the road, as well as the general public, supporting Okada drivers to improve their relationships with police, unions and customers.



4. Recommendations

b) Social inclusion

MP should follow through with its intentions to employ as drivers women and disabled persons (ie, those who are not able to drive petrol bikes but could drive EVs). This can not only increase its social impact, but also represent a good business opportunity, as women often don't take Okadas due to safety concerns. Being increasingly recognised as a company offering a superior service to all, MP will likely attract new customers, becoming the preferred supplier for drivers.

Increasing representation of women in management positions is also important to improve MP's appeal to all, and will help address concerns, raised by female Agents through the Gender Officer, of difficulties in raising issues with male managers.

MP should ensure that management reporting is in place to track its work on gender, setting clear targets with appropriate incentives and giving visibility to indicators such as:

- Income per Agent split by gender
- Percentage of Agents/Drivers who are female/male, as well as logging any disabilities.

This will support its communications with grant funders and impact investors, as well as provide management with important information on how the business is performing against different hiring strategies.



5. Conclusion

Deploying Mobile Power Electric Vehicles at scale has high potential to support **local development**, through the transformative power of accessible and reliable transport, as well as the employment of women, which contributes to **gender equality** by challenging gender norms.

Going forward, Mobile Power should explore the potential to also deliver **safety benefits for drivers, customers and assets** through its business model.

