

PROJECT CONSTRUCTION REPORT

ISALE OJA COMMUNITY



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Introduction

The project at Isale Oja was initiated following research by Fairaction's team, identifying the community as suffering from extreme water poverty.



With support from the Direct Aid Program (Department of Foreign Affairs and Trade, Australian High Commission Abuja) and Fairaction International, the implementation of a smart water kiosk has been completed. This report presents the project implementation details to all stakeholders, accounting for project costs, challenges encountered, and lessons learned.

Project Overview

Funders

- Direct Aid Program 2023–24 (Australia High Commissioner – Abuja)
- Fairaction International Pty Ltd

Project Implementation

- Fairaction Charity Foundation Nigeria in partnership with YSG Multitasking Nigeria Limited

Material Donation (IoT Gadget)

- Essential Need Project Limited & Farmbot Monitoring Solution

Project Beneficiary

- Isale Oja Community (Lat: 7.6301, Long: 3.8462)

Link to community condition before project

- [Community Condition Before Project](#)

This report documents the completion of the Sustainable Water Kiosk project, which includes the sinking of a borehole and the installation of a water treatment plant. The project aimed to provide a clean, sustainable, and reliable water source to the local community by sinking a borehole and constructing a water treatment plant. The project was executed by Fairaction Charity Foundation Nigeria in partnership with YSG Multitasking Nigeria Ltd and utilized a 10 FT container as the mobile water kiosk. The initiative is a significant step towards ensuring sustainable access to potable water for the community. Despite exceeding the planned timeframe and budget, the project was successfully completed. This report details the project's objectives, scope, results, challenges encountered, and conclusions.

Project Objectives

- **Construct a Sustainable Mobile Smart Water Kiosk**
Provide clean water to the Isale Oja community
- **Sink a Borehole**
Ensure a reliable source of groundwater
- **Install a Water Treatment Plant**
Purify the water for safe consumption.
- **Timely and Budget-Conscious Completion**
Complete the project within the planned timeframe and budget.
- **Timely and Budget-Conscious Completion**
Complete the project within the planned timeframe and budget.
- **Environmentally Friendly Construction**
Use sustainable materials and methods.
- **Compliance with Safety and Health Standards**
Adhere to local and international safety and health regulations.



Project Activities

➤ Community Engagement and Land Lease

Engaged with community leaders and members to gain support and secure land for the project.

➤ Geological Survey of the Site

Conducted a thorough geological survey to assess the suitability for borehole sinking.

➤ Sinking of the Borehole

Drilled a borehole to ensure a reliable source of groundwater.

➤ Construction of Mobile Smart Water Kiosk

Built the kiosk following the architectural design tailored to community needs.

➤ Installation of Storage Systems

Set up storage tanks to ensure a continuous water supply.

➤ Solar Installation

Installed solar panels to power the kiosk sustainably.

➤ Water Testing

Conducted water quality tests to determine the necessary treatment levels.

➤ Installation of Water Treatment Plant

Installed equipment to purify the water, ensuring safety for consumption.

► Capacity Building and Training

Trained local technicians and operators on maintenance and management of the kiosk.

► Ongoing Community Engagement

Continued awareness programs and training for kiosk attendants for post-construction operations.

► Project Launch

Officially launched the project, making the kiosk operational for community use.



PROJECT TIMELINE AND MILESTONES

The project was initially planned to be completed within three months. However, unforeseen circumstances, including the failure of the water testing after completion, extended the project timeline. The water failed 12 metrics of safe drinking water as per NIS 554:2015, leading to the implementation of a full-scale water treatment plant, which was outside the original project scope. This caused a significant setback, resulting in an additional two months for completion. The project is now completed and scheduled for launch by August 13th, depending on the availability of the community king. The community leaders have indicated that the king would like to be present due to the significance of the project.

Activity	Planned Dates	Actual Dates	Milestones Achieved
Community Engagement and Land Lease	Mar 30 – Apr 12	Mar 30 – Apr 13	Secured community support and land lease
Geological Survey of the Site	Apr 13 – Apr 17	Apr 14 – Apr 18	Completed geological survey
Sinking of the Borehole	Apr 19 – May 3	Apr 20 – May 4	Drilled and tested borehole
Construction of Mobile Smart Water Kiosk	May 4 – May 18	May 5 – May 19	Built kiosk structure
Installation of Storage Systems	May 19 – May 23	May 20 – May 24	Installed water storage tanks
Solar Installation	May 24 – May 28	May 25 – May 29	Installed solar panels
Water Testing	May 29 – Jun 12	May 30 – Jun 13	Conducted initial water quality tests
Installation of Water Treatment Plant	Jun 13 – Jun 27	Jun 14 – Jun 28	Installed and tested water treatment system
Capacity Building and Training	Ongoing	Ongoing	Trained local technicians and operators
Ongoing Community Engagement	Ongoing	Ongoing	Conducted awareness programs and training
Project Launch	Jun 30	Jul 30	Scheduled launch of the mobile smart water kiosk

Planned Start Date: Mar 30

Actual Completion Date: Jul 30

Planned Completion Date: Jun 30

Scheduled Launch Date: Aug 13

FINANCIAL REPORT

Initial Budget

The project exceeded the planned budget significantly due to several unforeseen circumstances, including extreme inflation during the project period. For example, borehole drilling was **estimated at 750,000 Naira** but the **actual cost was 2,230,000 Naira**. However, this shock was minimized as the dollar also rose against the Naira, allowing us to convert the available funds in dollars to a higher amount in Naira.

A significant cause of both the project timeline extension and unforeseen expenses was the need for extensive water treatment. The water testing failed 12 metrics of safe drinking water as per NIS 554:2015, necessitating the installation of a full-scale water treatment plant. This was outside the original project scope and resulted in additional significant costs and delays.



Initial Budget – Estimated Project Completion Expenses

Item	Cost (₱)
Shipping Container	600,000
Water Scaffold	500,000
Interlock Floor	85,000
Cement	85,000
Perimeter Fence (Finger Free)	570,000
Alucobond	360,000
Fabre Cement Board	250,000
Paint	180,000
Plumbing Materials	480,000
Tap Post (8 Units)	220,000
Windows (2 Units)	130,000
Door	90,000
Vinyl Floor Tiles	90,000
Concrete Works (Marble Stand & Tap Floors)	80,000
Metal Framming (Cladding)	165,000
Office Chair	42,000
Table	38,000
Granite	110,000
Water Pump	200,000
Bore hole Drilling	750,000
Blocks (Perimeter Fence)	200,000
Insulator (Polystyrene)	185,000
Wooden Batten (Frame)	150,000
Drundfox Pump	1,350,000
Solar Panel (6 Units)	720,000
Cable 6mm 2 core(150 meters)	420,000
Solar Installation Service Charges & Transportation	100,000
Signage(Cautions, FA Signage, and Banner)	180,000
Project Construction	2,500,000
Additional human resources and miscellaneous	650,000
Land Lease and Legal Fees	650,000
IoT Flow Meter	560,000
IoT Satellite Monitor	833,000
IoT Shipping and Installantion	70,000
Annual Farmbot Subscription	355,600
TOTAL	13,948,600

Actual Costs of Completing Project

Category	Actual Cost (₺)
Land Lease and Legal	650,000
Fabrication	
Water Tank Scaffold	1,525,000
Extra Solar Stand	210,000
10 FT Container	900,000
Structural Brace H-beam	186,000
Iron Plate	25,000
Tap Stand	170,000
Roofing Sheets	64,000
Square Pipe	75,000
Transportation	70,000
Generator and Fuel	43,000
Workmanship	280,000
Total Fabrication	3,548,000
Mason Works	
Interlocks	815,000
Stone Dust (10 tons)	135,000
Sharp Sand (10 tons)	75,000
Plaster Sand (10 tons)	40,000
Vinyl Floor	260,000
Granite (10 tons)	155,000
Concrete Block (400)	320,000
Cement (34)	357,000
Pigment & DPM	50,000
Extra Solar Stand Concrete	27,000
Mesh Wire	45,000
Coping & Casting	74,000
Tap Island Concrete	120,000
Workmanship	230,000
Total Mason Works	2,703,000

Plumbing	
Borehole Drilling & Fitting	2,230,000
Supply/Installation of Sub. Pump	375,000
3000L Water Tank	308,000
Plumbing Details	190,000
Workmanship	80,000
Total Plumbing	3,183,000

Cladding	
Alucobond	1,040,000
Fiber Cement Board (22)	395,000
Wall Profile	52,500
Corner Beat	16,800
Wall Angle (4)	4,400
Screws	6,000
Transportation From Lagos	190,000
Accessories For Fiber Boards	370,000
Workmanship	205,000
Total Cladding	2,279,700

Energy Installation	
Solar Power System	4,580,000
Electrical Fittings & Wires	62,000
Security Lights and Installation	69,500
Electrician (Workmanship)	55,000
Total Energy Installation	4,766,500

Carpentry	
Roofing Sheets	60,000
Water Tank Base Wood	39,000
Marine Board	75,000
Wood	65,000
Nail	10,000
Flash Band (Roof)	5,000
Workmanship	70,000
Total Carpentry	324,000

Perimeter Fencing	
Finger Free Mesh	992,000
Additional Pole	162,000
Entrance Gate (Mesh)	70,000
Workmanship	60,000
Total Perimeter Fencing	1,284,000

Miscellaneous	
Aluminum Windows (2)	178,000
Security Door	110,000
Screeding & Painting	260,000
Graphic Design & Print	250,000
Videographer & Photographer	300,000
Transportation Of Materials	390,000
Additional Welding Works	25,000
Mesh Roll (Tap Base)	15,000
IoT Installation	15,000
Fuel	15,000
Nail	5,800
Cleaning and other Expenses	34,000
Offloading of Interlocks	6,500
Sawmill Charge	5,000
Water and Drum	6,500
Borehole Flushing	155,000
Water Test (Microbial Examination)	150,000
Total Miscellaneous	1,920,800



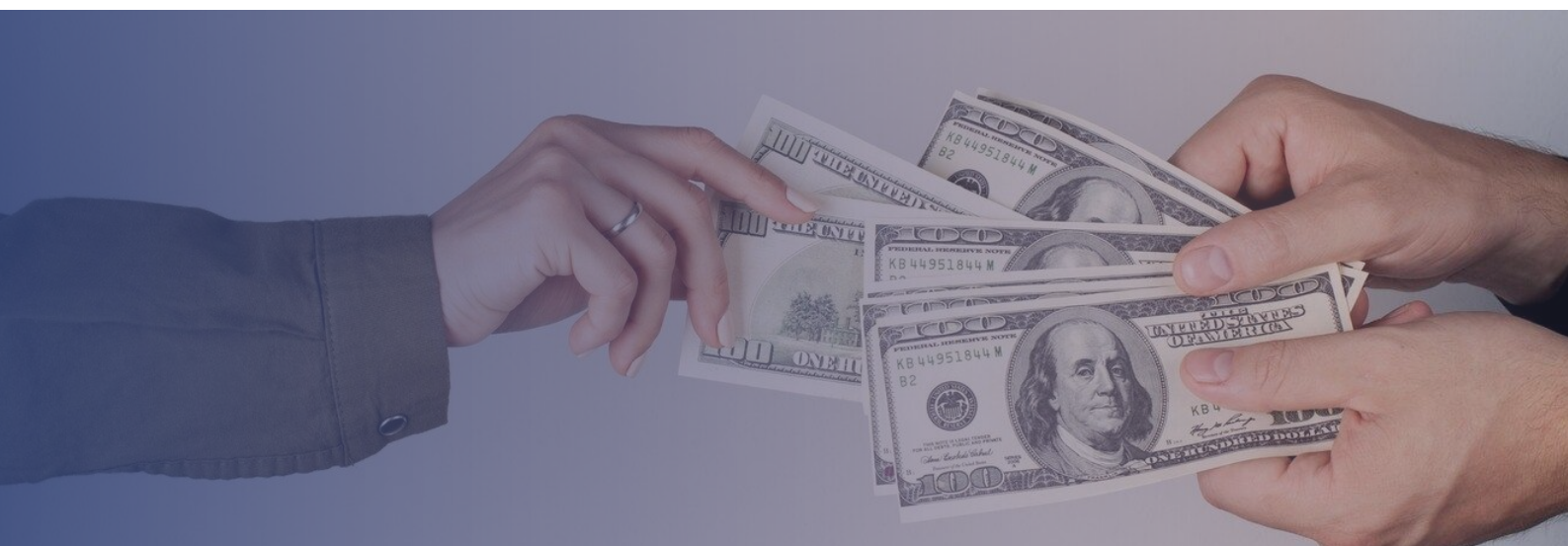
Water Treatment Plant	
Food Grade Cylinders (2)	2,500,000
Activated Carbon (4)	40,000
Hydrolite (2)	20,000
Filtration Media - Grade 4 (8)	8,000
Filtration Media - Grade 3 (8)	8,000
Filtration Media - Grade 2 (8)	8,000
Filtration Media - Grade 1 (8)	8,000
25Kg of Chlorine Pellets	85,000
Chlorine/Alum Manual Dispenser	78,000
Bag of Anionic Resin	35,000
Bag of Cationic Resin	35,000
Bag of Iron Removal Resin	42,000
50 Kg of Alum (Turkey)	195,000
Solar Surface Pump 1.5hp	500,000
Solar Panel 550 Watt (4)	840,000
DC Cable (12 meters)	81,600
Installation Rack 5mm Angle (8)	144,000
Transportation from Lagos	185,000
Plumbing Fittings and Workmanship	150,000
Treatment Plant Installation	650,000
Solar Installation	50,000
Welder Workmanship	30,000
Total Water Treatment Plant	5,692,600
Architect Inspection to Align Project with Architectural Design	1,500,000
Implementation Professional Fees (skills, time and effort) by YSG	5,227,660
Total Expenditure	₦33,079,260

Post Completion Activities	
Borehole Workers	80,000
Photographer	55,000
Solar Surface Pump Adjustment	45,000
Replacement 0.5 HP Surface	55,000
Water Test Second Round	310,000
Casting and Labor	25,000
Chair and Table	50,000
Automation	350,000
Tank Washing	35,000
Borehole Technician Transport	30,000
Implementation Professional Fees	207,000
Community Engagement & Education	1,433,000
Total Post Completion Activities	2,675,000

Material Contribution Donated Towards the Project	5,079,134.91
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Grand Total	¥40,833,395
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Cash Fund Spent	
DAP Fund Used	\$17,384 USD / ~ ¥23,000,000
Fairaction International Fund Used	~ ¥12,754,261
Donated Materials Essential Need/Farmbot	\$4,823 AUD / ~ ¥5,079,134.91



CHALLENGES AND IMPLEMENTED SOLUTIONS



Challenges Encountered:

1. Water Test



Challenge

The water sample collected from the borehole failed the water testing test according to the NIS 554:2015 standard.

Solution

- Implemented a comprehensive water treatment plant tailored to the specific metrics failed in the test. This approach ensured the treatment design was both effective and cost-efficient.
- Trained the kiosk attendant to perform routine maintenance of the plant and equipped the treatment plant with an automated system to minimize the need for the attendant's interference with the treatment process.



2. Technical Difficulties



Challenge

Unforeseen technical and logistic difficulties during the borehole drilling process extended the project timeline.

Solution

- Addressed each challenge as it occurred and documented all changes and effective solutions to ensure a smoother process for future projects.
- Deployed additional local technicians to speed up construction activities.



3. Cost and Inflation



Challenge

Prices skyrocketed during the project implementation period, due to several new policies implemented by the government, which significantly influenced the value of the Naira.

Solution

- Implemented cost-saving measures such as bulk purchasing where possible to mitigate the impact of inflation.



These strategies were crafted to address the specific challenges faced during the project, ensuring that project goals were met despite the hurdles encountered. This proactive approach in documenting solutions and adjustments will aid in refining future projects, enhancing efficiency and effectiveness.

Lessons Learned and Areas for Improvement

Throughout the project, several key lessons were learned that have shaped our understanding and approach to similar future projects. Here, we detail these lessons and outline possible areas for improvement:

1. Water Test

- **Lesson Learned:** The failure to meet drinking water standards significantly impacted our project budget and completion timeline.
- **Areas for Improvement:**
 - **Early Testing:** Conduct water tests immediately after borehole completion to assess the need for a treatment system, allowing for timely and budget-conscious planning.

2. Material Cost Inflation

- **Lesson Learned:** Unexpected inflation in material costs significantly impacted the project's budget and timelines.
- **Areas for Improvement:**
 - **Price Lock Agreements:** Negotiate fixed prices with suppliers for the duration of the project to avoid unexpected cost increases.
 - **Contingency Planning:** Increase the contingency budget to accommodate potential price fluctuations.
 - **Regular Market Analysis:** Conduct ongoing market analyses to anticipate price trends and adjust procurement strategies accordingly.

3. Logistics for Workers and Materials

- **Lesson Learned:** Logistics issues delayed the arrival of workers and materials due to the location of the remote community, impacting project timelines and efficiency.
- **Areas for Improvement:**
 - **Logistics Planning:** Develop comprehensive logistics plans that include contingency routes and transportation methods.
 - **Local Sourcing:** Whenever possible, source materials locally to reduce dependencies on extended supply chains.

4. Project Scheduling and Timelines

- **Lesson Learned:** Realistic scheduling and strict adherence to timelines are crucial to avoid delays and budget overruns.
- **Areas for Improvement:**
 - **Detailed Scheduling:** Create detailed project schedules with clear milestones and strict deadlines.
 - **Buffer Time:** Include buffer time in schedules to accommodate unforeseen delays, particularly those arising from logistical challenges.

These lessons and improvements underscore the importance of proactive planning, adaptive strategies, and thorough project management. By applying these insights, we aim to enhance the efficiency, effectiveness, and sustainability of future projects.



Project Outcomes

Despite facing significant challenges during its implementation, the project achieved its objectives, underscoring our team resilience and effective problem-solving capabilities.

Below are the key outcomes of the project:

1. Successful Completion:

Despite numerous obstacles, the project reached completion, showcasing our ability to adapt and overcome under challenging circumstances.

The completion of the project has led to the installation of a fully functional water treatment system that now provides clean and safe drinking water to the community, adhering to the Nigeria Standard for Drinking Water Quality.

2. Enhanced Community Engagement:

The project fostered a deep sense of community involvement and cooperation. Through continuous engagement and education, the community is now better equipped to manage and maintain the water infrastructure independently.

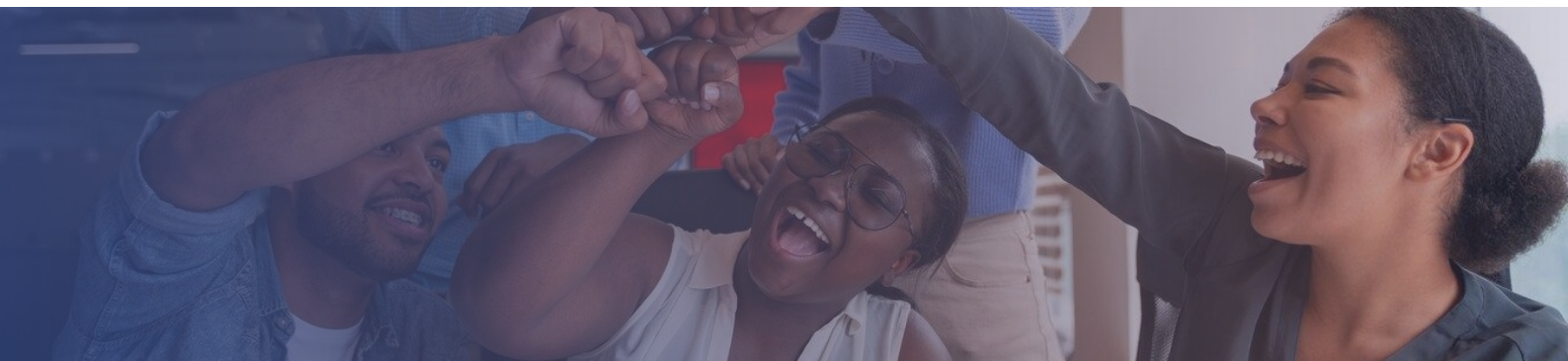
Community members were involved in the project from the outset, which not only facilitated smoother implementation but also ensured that the solutions were tailored to their specific needs and circumstances.

3. Infrastructure Resilience for Sustainability:

The design and implementation of the water infrastructure incorporated advanced technologies and robust construction practices, ensuring its long-term sustainability and resilience against environmental factors.

IoT and Target 6.1 Map Reporting System: Equipped with IoT and the Target 6.1 Map reporting system, live data from the project launch will be made available online and accessible to anyone with internet access. This will continuously display the project's sustainability rating, reliability rating, daily water usage, income from water sales, cost of operation and maintenance, and functionality of the project throughout its lifetime.

The use of automated systems in the water treatment process minimizes human error and maintains consistent water quality.



4. Capacity Building:

The project included significant training components for local technicians and kiosk attendants, which have built local capacity to operate, monitor, and maintain the water facilities effectively.

These training programs have empowered the community by providing them with the necessary skills to ensure the ongoing success of the project without external assistance.

5. Policy and Planning Influence:

The learnings and documented experiences from the project have contributed to shaping our project implementation policies and future project planning.

By demonstrating successful strategies to overcome financial and logistical challenges, the project provides a replicable model for similar initiatives in other communities facing water scarcity issues.

In summary, the project not only achieved its goal of providing sustainable access to clean water but also contributed to community empowerment, infrastructure resilience, and the development of local capacity. These outcomes have laid a solid foundation for future initiatives and have significantly contributed to the community's long-term well-being.

Conclusion:

The Mobile Smart Water Kiosk project, despite exceeding the planned timeframe and budget, successfully achieved its objectives of providing clean and safe drinking water to the community. The collaborative efforts of YSG Multitasking Nig Ltd and various stakeholders ensured the successful completion of the project. The mobile water kiosk now stands as a testament to our commitment to sustainable development and the improved quality of life for the community.



Recommendations:

➤ Mobile Kiosk

For future projects, opt for the outright purchase of a 10 FT shipping container for the mobile kiosk instead of fabricating one on-site.

➤ Stationary Kiosk

Consider purchasing land outright in communities to reduce the necessity for a mobile kiosk and replace the container with a more permanent bricks and block building to reduce project cost

➤ Post-Completion Monitoring

Regularly evaluate the borehole and kiosk to ensure they continue to meet community needs and address any emerging issues promptly.

➤ Maintenance Training

Provide ongoing training for local operators to ensure proper maintenance and operation of the borehole, treatment plant, and kiosk.

➤ Budget Management

Implement more rigorous budget management practices in future projects to better anticipate and control costs.

➤ Replication

Consider replicating this model in other communities facing similar water scarcity issues, incorporating lessons learned from this project.



Project Estimated Lifespan



Lifespan

The project is expected to have a lifespan of **20 years**, reflecting the durability and sustainability of the infrastructure. This longevity underscores the project's alignment with sustainable development goals.

Ensuring the project remains functional throughout its designated lifespan

Ensuring Functionality

- **Continuous Monitoring:** Continuous monitoring will be implemented to promptly identify and address any operational issues. This ensures that the infrastructure remains functional and effective throughout its intended lifespan.
- **Proactive Repairs:** Proactive repair strategies will be employed to quickly rectify any breakdowns, minimizing downtime and extending the lifespan of the project.

Financial Sustainability

- **Affordable Pricing:** Water will be continuously sold at a price set by the community, ensuring it remains affordable for all members. Water credits will be provided to individuals and families who cannot afford to pay, ensuring that everyone has access to clean water regardless of their financial situation.
- **Support Mechanism:** In situations where the income from water sales is not sufficient to cover the operation and maintenance expenses, Fairaction Nigeria will step in to provide the necessary financial support. This commitment guarantees the project's ongoing functionality and aligns with our goal of sustainable water access for the community.

Acknowledgement

We are deeply grateful to the Direct Aid Program (Department of Foreign Affairs and Trade, Australian High Commission Abuja) and Fairaction International for their generous funding. Special thanks to Clean Water for All Pty Ltd for providing the Target 6.1 Mapping system and to Essential Need Projects and Farmbot Monitoring Solutions for supplying the IoT gadgets.



Gallery



Drilling



Early Stage



Mid Stage



Solar Installation



Water Treatment



Fetching



Completed Stage



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