Osiligi Charity Projects

Food Growing in Schools Pilot Project

FF 665

Second Interim Report, 5th November 2024

Donor:	Fondation Eagle
Date of grant acceptance:	15th May 2023
Amount granted:	£30,000
Number of beneficiaries:	516 pupils (plus 28 teachers and 156 community households)
Location:	PalPal Primary School and St Christopher PalPal Secondary School, Siaya, Kenya
Period of project:	1st May 2023 to 31st October 2024 (extension requested)

1. Project background and aim

Many schools in Kenya are short of food, and in some cases, clean water. Many school children are malnourished, and lack of food and water results in illness or poor concentration. There is often a desire, and in some cases an attempt, for schools to become self-sufficient by growing their own food for the children. However there is usually no means (infrastructure or expertise) to do so, especially in arid conditions.

The aim of this project is to equip **2 schools in Kenya, which have existing boreholes and handpumps**, with the infrastructure (sufficient supply of electrically pumped water, pipework, fencing, tools) and agricultural skills to grow their own food sustainably in dedicated school food-growing plots.

The project will have 3 key benefits:

- Provide life-long skills to the children, giving them options for future food security and livelihoods
- Provide for the school kitchens
- Give the children valuable nutrition (and clean water, where not already available), enhancing their ability to concentrate and perform better at school

As well as providing life-long skills to the children involved during the study period, the infrastructure and knowledge within each school will benefit their families, teachers, future pupils and the wider local communities. A successful outcome to this initial pilot project would allow for a wider roll-out to many other schools, taking in valuable learnings from this initial project.

2. Project progress

a. Selected Schools

The two schools selected for this project by Osiligi Charity Projects, following in-person visits, were PalPal Primary School and St Christopher PalPal Secondary School. These are neighbouring schools that share the same borehole, served with a handpump. The schools are located in Alego Usonga Sub-County, Siaya County in western Kenya.

The numbers pupils and teachers at the primary school are 160 and 12 respectively, and at the secondary school are 356 and 16 respectively.

These schools were selected by Osiligi Charity Projects based upon:

- High degree of engagement from the head-teachers (Madam Mildred K'Onyango - Secondary, and Mr. David Opela - Primary), teachers, local authority and the community
- Adequate land to house the agricultural plots.
- A desire to continue to run the project self-sustainably once the initial pilot study is complete.
- Considerable cost savings due to their shared water facilities (for example, only one water tower needed to be constructed to irrigate both schools' agricultural plots).
- A mix of one primary school and one secondary school, so that impacts of both can be evaluated and compared.

b. Project team

A project team was formed which consisted of four Osiligi engineers (Peter Okolla, Alex, Esther and David), three members of the Osiligi Charity Projects UK management team (Eric McKinnon, Jean Grout and Jim Freeth), and the head of the construction company GeoDavin Company Limited. Peter Okolla was Project Manager and was on site throughout the construction works.

During the construction works (see 2d below), the project team met virtually on a weekly basis, to monitor project progress, and to identify any issues, and how to resolve them.

c. MOU

A memorandum of understanding (MOU) was generated, agreed and signed prior to the start of activities between the Osiligi Charity Projects, the headteacher of each of the two schools, and the contractor (responsible for delivering the electric pump, tanks, tower, irrigation and plot construction). This outlined each party's commitments to the project (see Appendix 2).

d. Water provision, irrigation and agricultural plot

Following site surveys, quotes from different contractor companies, and background reference checking, GeoDavin Company Limited was selected by the project team as the contractor to undertake the construction for this project, to build the agricultural plots, and to create a water system to irrigate the plots and serve the schools (Appendix 2). This involved:

- Digging foundations and constructing a water tower strong enough to carry two 10,000 water tanks, and high enough to gravity feed the taps and agricultural plots.

- Excavation and fencing of new agricultural plots (1000m^2 at the Primary school and 1000m^2 at the Secondary school).
- Trenching and plumbing to include 6 water points for general school use (drinking, cooking) and for irrigation of both agricultural plots.
- Equipping the borehole with a dual solar/mains electric pump and solar panels
- Full system testing.

The works took place in February and March 2024. Each task was planned and scheduled prior to the project start (Appendix 1), and each was carefully monitored and inspected by Osiligi engineers. While the construction was scheduled to take a maximum of three weeks, progress was hampered significantly due to bad weather and loss of power. The construction project took 8 weeks.

All tasks were successfully completed. Water is available at all 4 taps across the two schools, and the irrigation system on both agricultural plots is fully operational (see photos in Appendix 3). The rate of tank refill is sufficient to meet demand for school drinking water and plot irrigation.

A positive and respectful working relationship was maintained between all parties throughout the construction project. Measures were implemented to ensure safety and security during the project and in the future (for example, to prevent unauthorised access to the electrical systems and tower; surveillance of the new installations by security guards).

e. Farm supervisors

A farm supervisor for each of the two school was identified. To date they have been working voluntarily, but we propose that they be paid 10,000 Kenyan shillings/month (~£62/month) for the next 6 months from available project funds. The supervisors are responsible for the maintenance of the plots, pest control, planting and harvesting, and maintaining the gardening equipment.

f. Tooling

The project funded the purchasing of garden tools necessary for teaching and maintenance of the agricultural plots These included: Sack sprayers, leather gloves, face mask, wheelbarrows, watering cans, pangas, spades, jembes, slashers.

g. Agricultural training

The first of two 1-week food growing training courses was provided by the Haller Foundation and delivered at the Haller training farm in Mombasa from 12-16th August 2024. This was attended by four teachers, four pupils, two farm supervisors, and an

Osiligi water repair engineer (the project manager Peter Okolla) (11 participants in total). This training entailed a bus journey of over 500 miles from the schools in Siaya to Mombasa.

The training provided by the Haller team focussed on organic farming techniques, and was carefully designed to cater for both pupils and adults. Training included both classroom and practical sessions. See last two photos in Appendix 3.

The course covered the following aspects:

1. Introduction to agriculture basics - Haller Farmers App
2. Factors of production - know your soil.
3. Principles of holistic organic farming
4. Soil and fertility - compost
5. Plant nutrition
6. Soil and water conservation
7. Pests, disease weed management
8. Agriculture economics – basic record keeping

It is anticipated that the team that attended week 1 of training at the Haller training farm will attend a second week of training after 6 months. Ideally this will take place in the long November/December 2024 school holidays (to be confirmed).

3. Current status, project outcomes and benefits

Now that the infrastructure and initial training has been delivered, it is now essential to:

a) Monitor how the schools utilise these facilities and training;
b) Capture the deliverables from the project; and
c) Capture the short-term and lasting benefits (including those listed in Section 1), outcomes and challenges of this project, at the schools and in their communities.

This analysis will take place during the final phase of this project, and beyond.

Unfortunately the first and second seed plantings were significantly destroyed by hailstones, pests and diseases. It will be very important for the schools to learn how to mitigate or minimise these effects in future plantings. To this end, obtaining and acting on advice from Haller will be crucial.

4. Financials

Financial control was achieved by making individual payments from the Osiligi Charity Project bank account in the UK directly to the end-user or to the Osiligi project manager. While exchange rates therefore varied, the overall average to date was 161.5 KES/GBP.

Payment to the contractor GeoDavin was only made once the construction works were completed, and the Osiligi project manager had inspected and confirmed the works (80%). The remaining 20% was paid 3 months after initial operation of the system, and upon encountering no unresolved system issues.

The table below shows the overall spend in the project so far of £23,400, as of November 5th 2024. This is combined for both schools, since they are co-located. This means that £6,600 currently remains within the budget.

	KES	GBP	Comment
GeoDavin Company Ltd (tanks, electrics, tower, irrigation, fencing, plumbing)	3,128,090	£19,412	
Engineer expenses (travel to/from site)	64,000	£397	
Farming tools and seeds	132,700	£836	
Fence posts and barbed wire	0	£0	Provided by MCA
Security	0	£0	Provided by schools
Training (1 week x 14 people; travel, accommodation and food)	454,098	£2,755	
Total spent	3,778,888	£23,400	
Average exchange rate (KES/GBP)	161.50		
Current budget remaining (from £30,000)		**£6,600**	

Appendix 1: List of activities and status of each

Task No.	Task Description	Percentage Completion	Remark
1.	Site clearance and Mobilization	100	*completed*
2.	Excavation and Trenching	100	*Excavation and trenching completed*
3.	Preparation of Tower foundation	100	*completed*
4.	Formwork and Tower footing	100	*completed*
5.	Structural steel construction	100	*Completed*
6.	Bolting and assembling of tower joints	100	*completed*
7.	Tower lighting protection	100	*completed*
8.	Solar structure	100	*completed*
9.	Tank installation	100	*completed*
10.	Plumbing and piping	100	*completed*
11.	Hybrid Inverter	100	*completed*
12.	Primary School Drip irrigation system	100	*Tillage done; drip beds done Drip lines completed.*
13.	Secondary School Drip irrigation system	100	*Tillage done; drip beds done; Drip lines completed.*
14.	System Testing	100	*Completed*
15.	Purchase of Farm Tools	100	*Done*
16.	First training at Haller	100	*Completed*

Appendix 2: Contractor initial quote (tank, tower, irrigation and plot construction), a variation to the quote for additional (necessary) works, and the signed MoU.

Contractor quote.pdf

Contractor quote variation.pdf

PalPal Agricultural MOU.pdf

Appendix 3: Photographs

Digging of the trenches

Preparing the tower foundations

The completed 9m high tower carrying two 10,000 litre water tanks.

Testing and Commissioning of the new water system

Left: The new driplines. Right: The new crops beginning to appear.

The team receiving training (left) and completion certificates (right) at the Haller agricultural training farm in Mombasa.