Interim report to Fondation Eagle – 30th May 2023

Rainwater storage reservoirs at the Sunshine street boys Centre, Naivasha, Kenya

Fondation Eagle Reference: FF 649

Name of Charity: Footsteps International (UK registered charity number 1091026)

Introduction

On 14th December 2022, Fondation Eagle accepted our project proposal and awarded Footsteps International a grant of GBP 10,794. The aim of the project was to provide rainwater storage reservoirs to improve water supply certainty, increase crop yields and reduce food costs at the Sunshine street boys Centre in Naivasha, Kenya.

The project involved construction of 2 water reservoirs from 2 abandoned fish ponds into which rainwater run-off can be collected and stored.

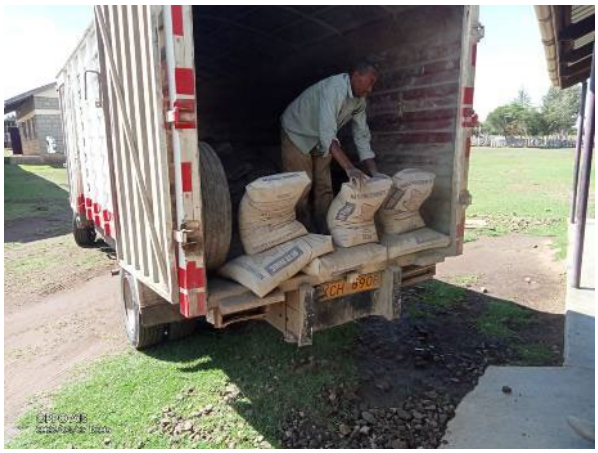
The **project beneficiaries** are the 75 former street boys resident at the Centre, and 20 staff who care for them (95 total).

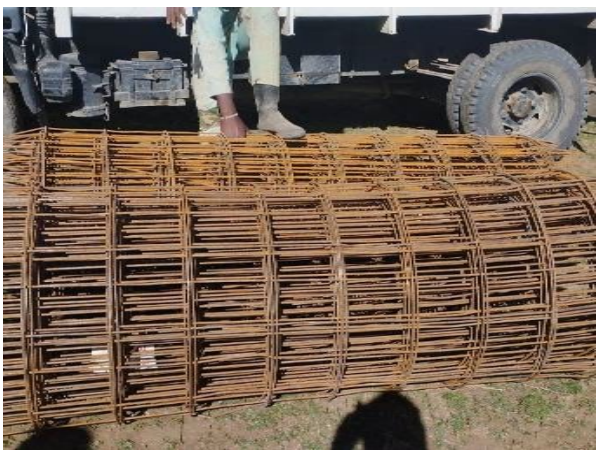
We **received the grant** on 23rd December and **transferred funds** to Kenya on 27th December 2022, The start of the project was delayed to allow the construction team to complete the Food and Beverage workshop at NTTI (Fondation Eagle grant FF650), and work commenced on **14th April 2023.**

Project achievements

Purchase of Building Materials

The grant from Eagle Foundation enabled us to buy construction materials for the reservoirs.





Site clearance

The ponds were originally dug in 2010 but with time the polythene sheet dam liners degraded due to prolonged exposure to the sun.

The pre-construction phase involved digging out the worn out dam liners, vegetation, and all the materials deposited into the ponds. This was intense manual work and it took a week to clear the 2 reservoirs.

The sides of the ponds were then excavated and smoothed to prevent future vegetation growth before the base was compacted and the dimensions checked so that construction could commence.

Design

Prior to construction starting the management team reviewed the design with the builder Patrick Mungai. After a critical look at the volume of water, Patrick advised using BRC and concrete to build the reservoirs instead of the building stones and steel bars originally proposed. (BRC is a high yield prefabricated steel reinforcement a mesh used to add tensile strength to the concrete in the base and flanks of the reservoirs to reduce the risk of cracking.)

Patrick advised that this would make the reservoirs stronger to withstand the weight of the huge volumes of water and the change could be accommodated within the agreed budget, so we adopted this method of construction.

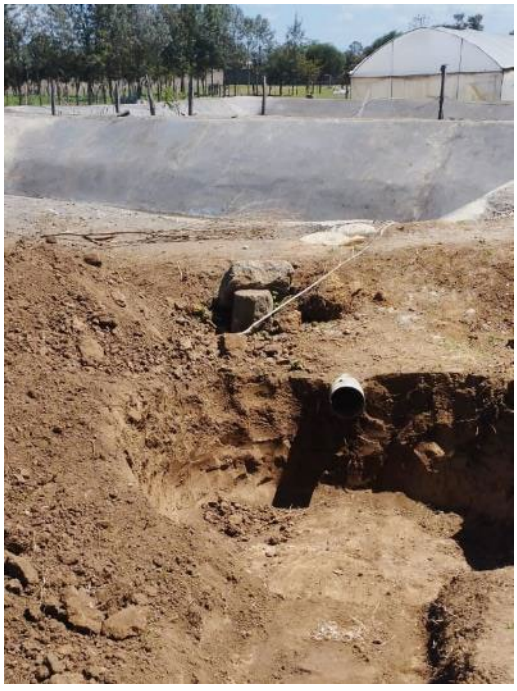
Construction

After laying a damp proof membrane, the BRC was installed followed by 6 inches of concrete mixed in a concrete mixer and vibrated to ensure that it was compacted to the high standards required for the reinforced foundation to carry thousands of litres of water.

After the curing of the base, timber formwork was fixed to allow concrete to be poured to form the sloped sides of the reservoirs.

After giving time for the concrete to cure, the wooden formwork was removed, leaving two concrete water storage facilities ready for operation.

A water catchment was also dug to convey water to the water reservoirs via the intake pipes of 8 inch diameter (photo right)



Water pumping

We purchased a petrol driven pump that will be used for pumping water from the reservoirs into the existing overhead water tanks for distribution and use.

Expenditure summary

Our estimated cost for the project was 1,500, 343 Kenya Shillings (KES) at an exchange rate of GBP 1 = KES 139. We received the grant on 23rd December and transferred funds to Kenya on 27th December 2022, obtaining an actual exchange rate of GBP 1= 147.4 KES.

The table below provides a detailed breakdown of the budgeted and actual expenditure (overspends are shown as negative figures, and note changes of materials resulting from the change of construction method). Our project team delivered the project with an **underspend of GBP 602** against the budget; this was achieved through tight budget control and a favourable exchange rate when we transferred the funds to Kenya.

		Exchange rate	*139*			*147.4*
Sunshine Centre Reservoir 1			**Budget**	**Actual**		
Ref	**Material**	**Est cost KES**	**Est cost GBP**	**Actual cost KES**	**Variance KES**	**Total GBP**
1	Stones 6x9	182,000	1,309	-	182,000	0
2	Sand Kedong	120,000	863	125,700	-5,700	853
3	Cement	130,000	935	139,600	-9,600	947
4	Steel bars D-10	162,000	1,165	-	162,000	0
5	Ballast	60,000	432	136,500	-76,500	926
6	Pipes			9,600	-9,600	65
7	BRC			178,770	-178,770	1,213
8	Timber			41,040	-41,040	278
9	Nails			5,040	-5,040	34
10	Dam Liner			41,700	-41,700	283
	Total materials	654,000	4,705	677,950	-23,950	4,599
	30% labour	196,200	1,412	184,900	11,300	1,254
	5% contingency	42,510	306	-	42,510	-
		892,710	**6,422**	**862,850**	**29,860**	**5,854**
Sunshine Centre Reservoir 2				**Actual**		
Ref	**Material**	**Total KES**	**Total GBP**	**Total KES**		**Total GBP**
1	Stones	117,000	842	-	117,000	0
2	Sand Kedong	90,000	647	94,300	-4,300	640
3	Cement	97,500	701	104,700	-7,200	710
4	Steel bars D-10	81,000	583	-	81,000	0
5	Ballast	45,000	324	102,500	-57,500	695
6	Pipes			6,400	-6,400	43
7	BRC			124,230	-124,230	843
8	Timber			30,960	-30,960	210
9	Nails			3,960	-3,960	27
10	Dam Liner			26,700	-26,700	181
	Total materials	430,500	3,097	493,750	-63,250	3,350
	30% labour	129,150	929	121,250	7,900	823
	5% contingency	27,983	201		27,983	0
		587,633	**4,228**	**615,000**	**-27,368**	**4,172**
Petrol-driven pump		**20,000**	**144**	24,500	-4,500	**166**
Project total		**1,500,343**	**10,794**	**1,502,350**	**-2,008**	**10,192**

The original budget is included in Annex 1 for reference. Annex 2 provides a summary of income and expenditure for the 3 Naivasha projects Fondation Eagle funded in December 2022.

Summary of project successes and benefits

Successes:

The successful completion of the two reservoirs provides our Centre with a capacity to hold nearly one million litres of rainwater that would otherwise have run off to waste. The water stored will be of great significance to our Centre as it will ensure vegetable production throughout the year including the times of prolonged droughts when vegetables are very expensive. The Sunshine Centre now has an excellent source of water for farming, ensuring a sustainable vegetable supply to the kitchen and ensuring healthy beneficiaries throughout the year.

Challenges:

1. The change of construction method has been explained earlier – we are confident that this was the correct decision based on the volumes of water we expect to store.
2. The start of construction was delayed to allow the builders to complete the Food and Beverage workshop at NTTI. As a result, most of the construction happened during the month of April which coincided with the start of the rainy season and a period of heavy downpours which interfered with the work plans. We are happy to report that despite the challenges the two reservoirs are ready for use.
3. We still need to fence off the two water storage facilities to keep off the boys and the Centre's sheep and cows.

Conclusion

We are most grateful to Fondation Eagle for their support that will ensure we have enough vegetables for our kitchen which will boost the health of the former street boys we care for. We expect we will have surpluses at times which we will provide to needy neighbours.

Simon Kuria – Sunshine Centre Social Worker.

Acknowledgment

Our final thanks comes from Rev Simon Kinyanjui, director of the Sunshine Centre

Thank you very much Eagle Foundation for the provision of funds for the twin water reservoirs at Sunshine, Food and Beverage Workshop at NTTI and a Digital Library at Wambari School.

This is of great support to the three institutions translating to physical growth with a direct long lasting impact to our beneficiaries, trainees and students respectively.

Rev. Simon

(Rev Simon is pictured with Francis Kagotho, a street boy who came to the Sunshine Centre when it opened in 2004 and who we looked after for many years. Francis is now married and has three children and was part of the team that constructed the two reservoirs).

ANNEX 1: Original project budget breakdown for reference

			Exchange rate		*139*
Sunshine Centre Reservoir 1					
Ref	**Material**	**Quantity**	**Unit cost KES**	**Total KES**	**Total GBP**
1	Stones 6x9	14 loads	13,000	182,000	1,309
2	Sand Kedong	8 loads	15,000	120,000	863
3	Cement	200 bags	650	130,000	935
4	Steel bars D-10	180 Pcs	900	162,000	1,165
5	Ballast	4 loads	15,000	60,000	432
			Total materials	654,000	4,705
			30% labour	196,200	1,412
			5% contingency	42,510	306
			Total	**892,710**	**6,422**
Sunshine Centre Reservoir 2					
Ref	**Material**	**Quantity**	**Unit cost KES**	**Total KES**	**Total GBP**
1	Stones	9 loads	13,000	117,000	842
2	Sand Kedong	6 loads	15,000	90,000	647
3	Cement	150 bags	650	97,500	701
4	Steel bars D-10	90 pcs	900	81,000	583
5	Ballast	3 loads	15,000	45,000	324
			Total materials	430,500	3,097
			30% labour	129,150	929
			5% contingency	27,983	201
			Grand Total	**587,633**	**4,228**
Sunshine Centre petrol-driven water pump				**20,000**	**144**
Sunshine Centre project total				**1,500,343**	**10,794**

ANNEX 2:

Income and expenditure summary for		
3 Naivasha projects (FF 648, 649, 650)		
Receipts		**GBP**
Balance from previous project	573	
Grants received Dec 23	29,737	
Total funds available		**30,310**
Expenditure		**GBP**
NTTI (FF 648)	10,192	
Sunshine (FF 649)	13,820	
Wambari (FF 650)	4,630	
Total expenditure (3 projects)		**28,642**
Balance remaining		**£1,668**