



Milgis Pan Dam & Land Rehabilitation Project





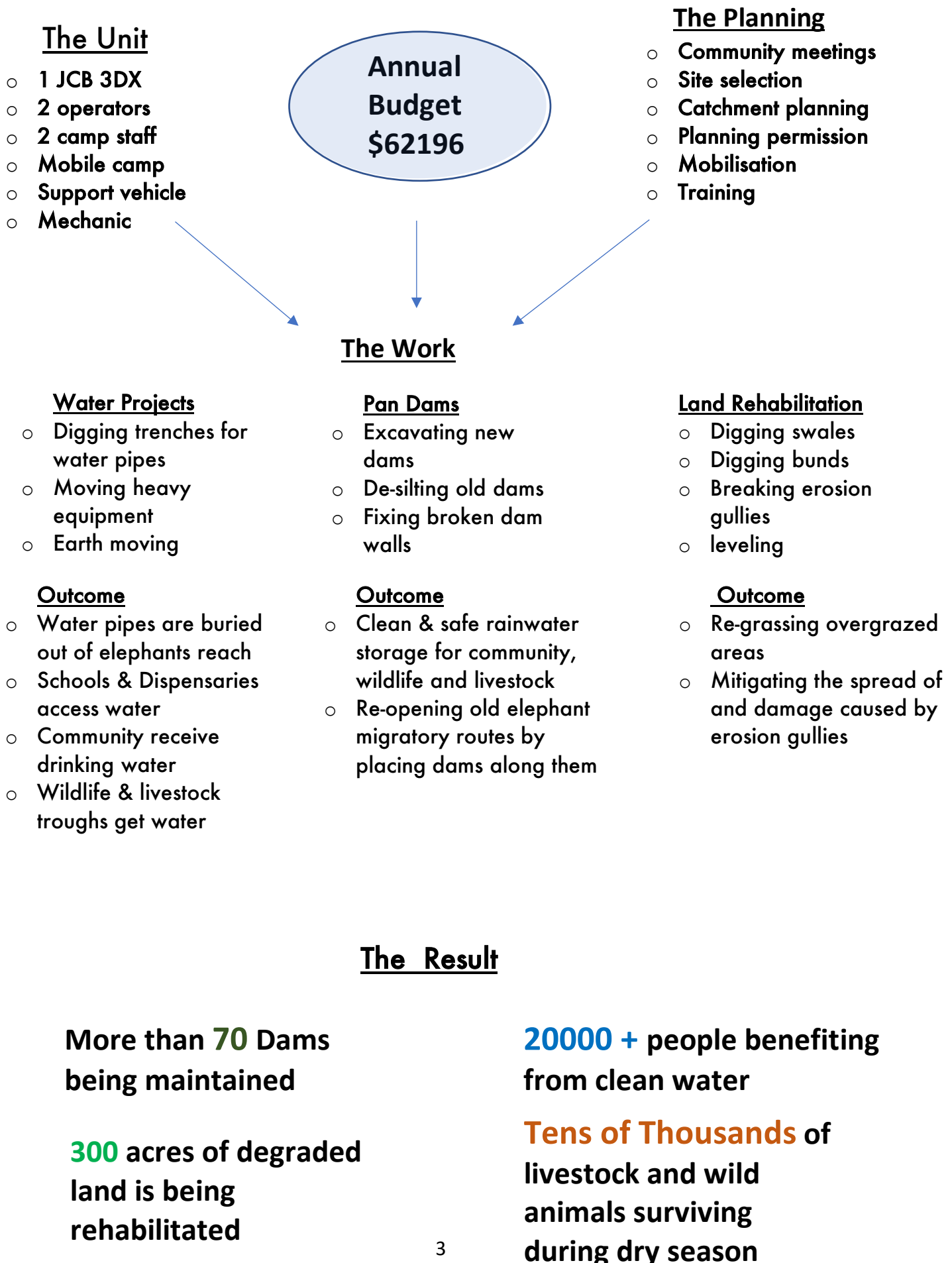
1.0 Introduction

This project was started in 2010, with the goal of building small pan dams for communities that had limited access to water. The project started off with a Volvo backhoe tractor that was bought second hand. This machine was excellent – building and maintaining more than 40 dams, and helping to build several water projects. However, spares for Volvo were difficult to find and there was no local dealer.

We were very fortunate to receive further funding to trade in the Volvo for a new machine, and we brought the JCB in 2017. We are lucky to get good service for JCB here in Kenya - this has made all the difference! We trained up two students from our school sponsorship program, and now they are the JCB operators and have learned a huge amount over the past year and a half! It is amazing to see the amount of work that can be achieved in such a short time with this machine. Some communities are still building dams by hand which takes years.

AT A GLANCE

1.1



2.1

Pan Dams

During the dry season, the only place to find water is in the lugga's (dry river beds). Pastoralists living near the lugga's dig deep wells in the sand to get to the precious water. As the season gets drier, these people must travel long distances to find fodder for their livestock, and must then make the long return to the nearest water source.

Additionally when the rains come, the rivers flood and destroy the hand dug wells. The beginning of the rains does not necessarily signal the end of harsh times. We took this into consideration and realized that the best way of alleviating this problem is to harvest the rainwater and build storage in the form of pan dams near the communities.

Dam building can be very complicated, and we have to take a lot of things into consideration before we build the dam. First of all, we have many meetings with the community elders and area chief. Some communities do not want a dam because it can cause an influx of people into their area. They would rather walk far to get water than lose their precious grazing due to increased population in the area. We also agree with the community on the site of the dam. The site needs to have a decent catchment area, have suitable soil and rock structure and needs to be close to the wildlife and community who will be using it.

Finally, once everything is in place with the community, we mobilise the JCB and the dam is built. It is then a waiting game for the rain.



Saving wildlife , one dam at a time

During the dry season, the warriors work very hard to dig deep wells into the lugga's, and use these to water their livestock. At night the wildlife also visit these wells to have a drink as they are the only source of water. Some animals can jump in and out of the wells, whilst others simply cannot reach the water and have to go thirsty. The elephants end up completely destroying the well as they strain to reach the deep water (see below picture). The next day, the warrior must spend hours re-digging this well. Eventually this frustrating cycle leads to human – wildlife conflict and the wildlife always loses.



Another big issue is that elephants and other wildlife sometimes fall into the wells. In the picture below a thirsty elephant slipped head first into this well!! Any lucky survivors who fall into wells are usually abandoned by their family group and must be rescued and reared.



This image is of the rear end of an elephant. What an awful death! Unfortunately not only losing the beautiful life of an elephant but also the well and the surrounding area will be ruined, by the rotting carcass.

The only way to stop this is to put as many dams as possible in place!



A gruelling night of digging – sadly this guy was too weak to pull through.



This one we were able to rescue but we never managed to reunite it with the mother, so it had to be helicoptered to DSWT, in Nairobi.



The critically endangered Grevy's zebras that were bogged down trying to reach a small patch of water in the Milgis lugga. There are only 2000 left in the world! Sadly both of these died.



This elephant (now luckily just the tracks!) ONLY just saved its own life. It was a huge elephant and it would have gone down head first. A terrifying thought.



Water deep down

Some of our new dams are in areas where elephants have not dared to tread since they were poached out in the 1970's. We know that building dams on their migratory routes has been helping them use these routes again. This has encouraged them to return to Mount Nyiro where they have not been for 40 years! When the elephants wallow, they glaze the soil, which helps the dams hold water for longer periods, so in areas with elephants the people have water in their dams for longer. People actually encourage the elephants to visit their dams as opposed to chasing them away, as is the case of wells.



The dams also help to encourage the People out of the mountains

Another advantage to pan dams is that people do not need to take their livestock up into the mountains to find precious water during dry times. By building dams in low lying areas, we are significantly reducing the number of fires in the Ndoto's and Mathews range. Fires either started by irresponsible people or by accident by hunter gatherers collecting honey in the mountains (or even in the lugga's), is a huge issue and the longer we can keep the people out of the mountains with their livestock the better!

By creating a network of dams that would allow people to remain in the foothills during dry periods we are mitigating loss of biodiversity in these spectacular forests.



A huge cedar tree burned in the name of a few drops of honey.

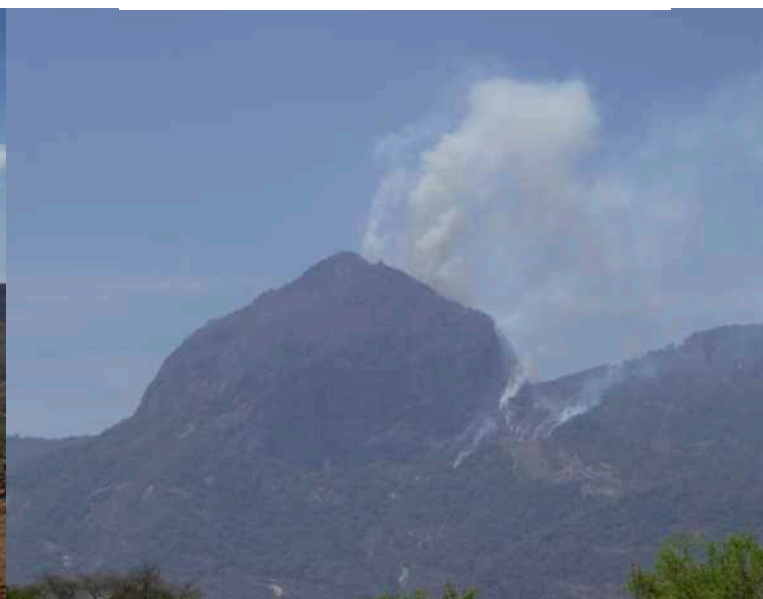


Fires consume thousands of acres some years, destroying all in their path.



2.2

Salvadora biome being burned along the barsaloi lugga.



Kimanik peak ablaze. Burned by the community living below.

2.2

Land Restoration



Overpopulation and poor resource management has led to huge tracts of land being overgrazed. The result is the erosion of thousands of acres of rangeland. These erosion gullies are only getting worse every year, and are causing widescale flooding, loss of grazing, and plenty of top soil is being carried away. We have started a large scale land restoration project. The JCB plays an important role in mitigating erosion and helping us rebuild the soil in catchment areas.

Swales

Using the tractor, we are able to dig long trenches (swales) across the contour of eroded hillsides. These slow down all of the run off and helps the water to infiltrate into the ground. Back when we had the Volvo, we put in some swales as an experiment. They were so succesful that the community begged us to come and put some more in. We went there in January and put in another several acres of swales. The difference was amazing in the area that had swales put in 5 years ago – there was a mini forest and lots of grazing.

Below: New Swales being put in



Bunds

These are another rehabilitation strategy. They are basically 'mini' dams that are dug across an eroded area in a fishscale pattern. They catch any running water and it sits instead of flowing, thus increasing infiltration. See below how the bund also provides water for livestock and wildlife to drink from. By catching seeds and water, we hope these bunds will become mini forests in a couple of years' time.



This erosion gully is almost as deep the JCB is tall.



What it can look like if restoration works.

2.3

Water Projects

The Milgis trust has established and maintains 15 water projects. The water projects are large - some of them producing water for up to 5000 people. The projects are solar powered and pump water for long distances to communities.

The JCB is extremely useful in the establishment of these projects. The biggest job is digging a deep trench for the main pipelines. These trenches need to be deeper than 2 feet otherwise the elephants can smell the water in the pipe and end up damaging the pipelines. Previously, we had to dig these pipeline's by hand, which took months. Some pipelines are more than 10 kilometres long.



JCB 'Trenching'.



Women and children digging a pipeline by hand.

The JCB also helps to dig up and move large rocks that are used in well linings. It helps to move earth and other general construction elements. Without the machine our projects would be a lot more expensive to put in and would be of a lower standard.

