



# Mwandi UCZ Agriculture Project: Livestock Development Project

*A Report on the Extension Services provided to Our Rural Community  
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## Introduction

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In July 2010 Mwandi UCZ Agriculture Project received a substantial donation of Veterinary Pharmaceuticals from Pfizer for use in the Mwandi area in conjunction with our livestock development program and visits from Missionary Veterinarians. This report details where this medication was used, how it was used, the substantial benefits derived by the community and how Pfizer can perhaps continue to help our community through its support of our Livestock Development Programs.

## Rationale

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Mwandi Royal village is located in the Western Province of Zambia (Barotseland), on the banks of the Zambezi River, 140km upstream from the Victoria Falls. Mwandi's climate is closely linked to that of the Kalahari Desert; this attracts poor and inconsistent rainfall and endemic drought. Rainfall varies from year to year making it difficult for subsistence farmers to rely on annual harvests. Average rainfall in the region is generally around 450mm per annum. If rainfall is erratic or late, hunger follows, increasing poverty and negatively impacting on standards of living and health. This is generally below average for the country and is unstable and unpredictable. The HIV/AIDS rate in the area is estimated at 33%.

The major agricultural activity in this part of Zambia is the rearing of cattle and subsistence agriculture. The community has a growing population of *Bos Taurus* and *Bos Indicus* cross animals and the village alone has approximately 900 animals spread across a number of Kraals. The cattle population across the Mwandi UCZ Mission catchment area is approximately 30,000. The local Lozi people are traditionally very proud cattle owners and have nearly thirty adjectives in the local language to describe the colours and characteristics of their cattle.



The proximity to the Zambezi River and its vast flood plain allows this area to be relatively successful cattle country with the animals having access to grazing for the majority of the year.

This success however has been badly affected recently by the outbreak of numerous bovine diseases including anthrax, foot and mouth, TB and Contagious Bovine Pleura-Pneumonia. In addition to this the area is badly affected by numerous vector borne diseases including anaplasmosis, babesia and Trypanosomiasis and with other internal parasites and Liver flukes which cause great problems in the general health of the herd. In some cases these diseases have caused the total loss of stock for some farmers but more commonly prevented farmers from selling their animals due to the subsequent bans imposed on the slaughtering and moving of livestock and carcasses. This has a substantial effect on food security, standards of living and economic growth throughout the community.

Mwandi UCZ Agriculture Project is an extension of Mwandi UCZ Mission, the Mission has been serving the community of Mwandi since 1870 through a large Mission Hospital and School. The Mission has evolved and adapted to meet the needs of a community blighted with HIV/AIDS and its various economic, social and human consequences.

Mwandi UCZ Agriculture project was founded in 2001 with the express commitment to;

- Provide quality subsidized produce to the mission and its various institutions
- Provide employment and quality subsidized produce to the Community
- Provide Agriculture extension services, training and demonstrations to the Community and surrounding Farmers of good agricultural practice, animal husbandry and basic veterinary services.

With cattle playing such a large traditional role in the local culture a significant part of this commitment has evolved into providing guidance to local farmers as to how to utilize their cattle as a resource to better improve their lives and that of their families, to stimulate economic growth and provide direct investment into the community from local sources as opposed to a reliance on Aid and “handouts”.

Over the next three years we therefore have a commitment to;

- Halving Calf Mortality (currently at 60%)
- 25% Herd Growth across the area
- Introduction of a Cattle vaccination program
- Implementation and training of on biosecurity and disease control protocols
- Implementation of proper parasite control through dipping and worming protocols
- Facilitating improvements in Market accessibility, Value addition and training on the



### Market Chain.

We therefore wish to express our deep gratitude to Pfizer for their assistance over the last year in enabling us to make great steps forward in making these aims a reality for our community. The below report will detail how we utilized this support, where it was used and how it has significantly benefited our individual livestock owners and their families.

## Pastoral Cattle Herding in Barotseland, an overview.

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In order for us to properly convey our need and for Pfizer to evaluate the impact last year's donation has had upon our Cattle community it is important to understand the way in which animals are traditionally kept, herded and treated in Barotseland.

As with much of life in Barotseland Cattle herding revolves around the annual flooding of the Zambezi River. As detailed previously our climate is closely linked to that of the Kalahari, with poor seasonal rainfall from December to March and as a result natural rain fed pasture is limited to a few months a year. Our Cattle herds therefore heavily rely on the annual inundation of our floodplains to refresh grazing. The flooding of the plains starts in January as floodwaters from the Congo and Angola reach Barotseland, the plains are then completely inundated by March and water levels start to fall at the end of April releasing clean fresh areas for grazing.



This has a number of limitations;

- Cattle have limited areas for grazing between the end of the rains and the emergence of the flood plains.
- Limited areas of good grazing during this period means that the Cattle are bunched very close together causing a sharp rise in vector borne diseases and parasitic infections. The proximity of the herds also makes it very easy for diseases to be transmitted amongst them.
- Cattle enter the flood plains that have been sanitized by the flooding, full of ticks and worms, meaning that they do not fully benefit from the lush grazing that becomes available to them.
- Once the flood plains have drained in August water sources become limited and once again cattle are grazed in close proximity again making disease and parasite transfer a given.
- To further complicate the situation Cattle will often share these water sources and flood plains with wildlife. Our Buffalo herd for example has endemic foot & mouth and CBPP in it and all wild life are carriers of Trypanosomiasis.

Traditionally, the Lozi people have been very guarded with the use of Western Medicine in their Cattle herds and have greeted efforts to help overcome this with suspicion. They tend to rely upon traditional practices, remedies and poultices to “cure” their cattle of disease. A good example of this is the cutting and tattooing of the hide around the area of concern on the animal. While this may invoke an immune response from the animal to the cutting it generally is of no use in curing the condition and often leads to secondary infections.

Unfortunately with the encroachment of serious and new types of disease local farmers have seen their herds decimated and traditional practices insufficient to deal with these conditions. A survey conducted in the late eighties showed the cattle population of Western Province to be in the region of three million, a similar survey from last year now puts the figure at around 700,000. Much of this decline can be directly attributed to the upsurge in disease and a lack of a unified response to the problem.

It is very difficult for our farmers to access firstly vaccines to inoculate their herds from these diseases and secondly to access the drugs they require to treat their herds. The nearest reliable source of these drugs is in Lusaka over 800km away. During outbreaks Farmers have often scrimped their meagre resources together and travelled to Lusaka to purchase vaccine and drugs. Unfortunately, then due to a lack of education they do not refrigerate the vaccine and on returning to their herds have no way of refrigerating the vaccines thereby nullifying the effects of the vaccine.

This has a number of obvious problems primarily, the animals are not resistant to the disease they have been vaccinated for and may contract the disease and die. This then leads to further suspicion that Western Medicine is either not effective or is what has actually killed the animal.

## The Program

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In order to try and combat the above problems we have attempted to develop a simple Livestock Development Program that will help our farmers secure the future of their herds and secondly improve their standards of living for themselves and their family by maximizing the resource available to them.

We hope to facilitate at cost price the availability of Dewormer, Dip and a number of Specific Vaccines that we can obtain and store properly on behalf of the farmer. We will then ensure that the medications are administered correctly and at the appropriate times to maximize their effects. The cost of this annually is around US\$3.80 per animal per year.

The program will provide:

- Quarterly dewormer (Albendazole Bolus)
- Fortnightly Dipping/Spraying
- Anthrax Vaccine
- Black Leg Vaccine
- Lumpy Skin Vaccine
- Brucellosis (Young Heifers)
- Hemorrhagic Septicemia Vaccine

This is in addition to Government sponsored vaccination programs for foot and mouth and CBPP.

It is important that our farmers realize the costs involved so they firstly place value upon their animals and secondly they begin to see their herds from a business perspective and economic resource rather than just a sign of traditional and cultural importance. At no time has any farmer been charged for treatment with the products Pfizer has donated or at any other time.

The program will also continue to provide constant education and advice through extension services to the farmers with workshops, visits from visiting veterinarians and help in times of crisis.



## Pilot Schemes

The project has spent the last year educating and sensitizing our community to the benefits of vaccinating their cattle and providing them with proper dipping and worming schedules throughout the year. Having met with our local traditional authority and received their blessing we decided that it would be beneficial to the program to get a herd of cattle and embark on a demonstration scheme.

Our local Chief offered his herd of eighty animals for us to manage along the lines of our program and gave us his full cooperation and free reign to manage his herd as we saw fit. A number of husbandry problems were addressed immediately, namely the number of bulls and steers in the herd meant the herd was not breeding best with best and cows were competing with steers for limited grazing.

Due to chronic parasite infestation the animals were emaciated and mortality rates were high. As a result of their poor condition none of the animals were cycling and the birth rate of calves was around 10%. A number of animals had large abscesses caused by injuries sustained from horns, due to the large number of males in the herd fights were common and other animals would get caught by horns from fighting males. The few calves left alive in the herd were also chronically infested with ticks and worms and as a result had chronic diarrhea.

The products that Pfizer has provided us allowed to completely revolutionise the health of this herd. This herd is now the healthiest and most productive herd in the area. The animals have been subject to a proper anti parasite regime using scheduled inoculation with Dectomax and a fortnightly Pouracide pour on which has led to a zero mortality rate amongst the herd this year.

The tetracycline you supplied has allowed us to effectively treat abscesses on animals and any anaplasmosis that has occurred. The lectade was instrumental in addressing the dehydration and restoring the health of the very ill calves when we first started our treatment regime.

This remarkable transformation has sparked massive interest from the cattle owners around Mwandi and has made it very easy for us to get farmers interested in vaccinating animals and placing them on a proper parasite control regime. This year for the first time animals around Mwandi will not be allowed to enter



the flood plains or the Islands in the river until they have been drenched and dipped. This we hope will go a long way to helping contain the parasite infections that have blighted herds on these plains in the past.

Following the success of this pilot program we would appeal to Pfizer for help in establishing three more pilot demonstration schemes across the district so we can properly display to the entire community the benefits of vaccination and preventative treatment. The villages in which we wish to establish these schemes are Magumwi, Simenso, and Kakulwane and are all indicated on the map above.

## Anthrax

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In early November 2010 the project received a number of calls from Villages across the Machile area detailing numerous cases of fatalities amongst their herds. We also received information from the Mission Hospital that they had received four cases of Anthrax from the same area as the reported Cattle fatalities. We made an immediate visit to the affected areas to examine dead animals and to visit and talk with cattle owners.

Our Pfizer products were of immediate benefit to us because we had the required volumes of tetracycline available to administer large prophylactic doses to the affected herds, giving us the invaluable time to move cattle to areas unaffected by the disease and to facilitate the purchasing of Anthrax Vaccine. This swift action could not have been achieved without the assistance Pfizer gave us.

We then in conjunction with the Zambian Government Veterinary Department embarked on a mass vaccination campaign and vaccinated over 27,000 animals from the Mwandi area. During this campaign we were also in a position to treat animals that were affected by other diseases and conditions with Pfizer products.

Cattle were successfully treated for Pneumonia with Draxin and Exocenel, chronic worm infestation and mange with Dectomax and tick borne conditions, pink eye and foot rot with tetracycline. Without this help a many of these animals would have died or would have had to be sold for slaughter at a low return for the owner.

## Current Challenges

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This program faces many challenges and we owe Pfizer a huge debt of gratitude for the contribution they have made to this program. Without their assistance we would not be in the position we are in now on the

verge of rolling out an amazing potentially life changing program in our community, not to mention the number of farmers would have continued to sustain devastating losses in their herds without the help you gave us.

Challenges we continue to face

- **Education** – Continuing to demonstrate to farmers and cattle owners the benefits of proper care and husbandry. Our small project is not in the financial position to purchase the required drugs and vaccines to run the pilot schemes we hope to start this year. We also require the production of education materials and aids to help deliver our message.
- **Scale of Need** – With 27,000 animals to care for the logistical challenge is immense, our remote location makes the procurement of drugs a challenge for us let alone Cattle owners who have no access to refrigeration
- **Vet Centre** – We would like to construct a purpose built vet centre from which to launch our program from this would also be a research base and somewhere farmers could come for help. We have a missionary vet ready to staff it and we have some fantastic laboratory equipment already donated from a practice in the USA. **Cost \$25,000**

We would like once again to thank Pfizer for their help over the last year and would greatly appreciate any further assistance they could provide to our program. We are more than happy to partner with them in any publicizing of their assistance to us and perhaps any research they may wish to conduct.

With Thanks

Ruairidh Waddell

Project Coordinator

Mwandi UCZ Agriculture Project

