



KwaQangqatho Homestead Grain Farming & Livelihoods Project

Contact:	Rory Clark
Tel:	+27 (0)607021223
Email:	info@projectafrica.com

INTRODUCTION

The project area is situated within uLundi Local Municipality. The uLundi Municipality is located on the southern boundary of the Zululand District Municipality in north-eastern KwaZulu-Natal. The uLundi municipal area is approximately 3 250 square kilometres in extent. The municipality incorporates some of the most rural and poor areas of KwaZulu-Natal. Approximately half of the Municipal area consists of commercial farms and the area supports a substantial agricultural community.

Many of the communities within this municipality suffer from a high population growth rate, a youthful population, incidence of HIV/AIDS, a high unemployment rate, decreasing formal and increasing informal employment, low diversity in the economy, low annual per capita income, high levels of illiteracy and inadequate infrastructure and services. A number of farms were purchased by KwaZulu-Natal Amafa and Research Institute (former Amafa aKwaZulu-Natali) around 1998. There are approximately 28 (twenty eight) families residing inside the proposed eMakhosini Ophathe Heritage Park (EOHP).



PROJECT DESCRIPTION

The project seeks to address the core issues of household food security and income generation by providing 22 homesteads within the EOHP community with the basic infrastructure, equipment, farm layout and support for them to grow staple grains and other crops in an organic and sustainable way and to generate an income off the surplus from their land.

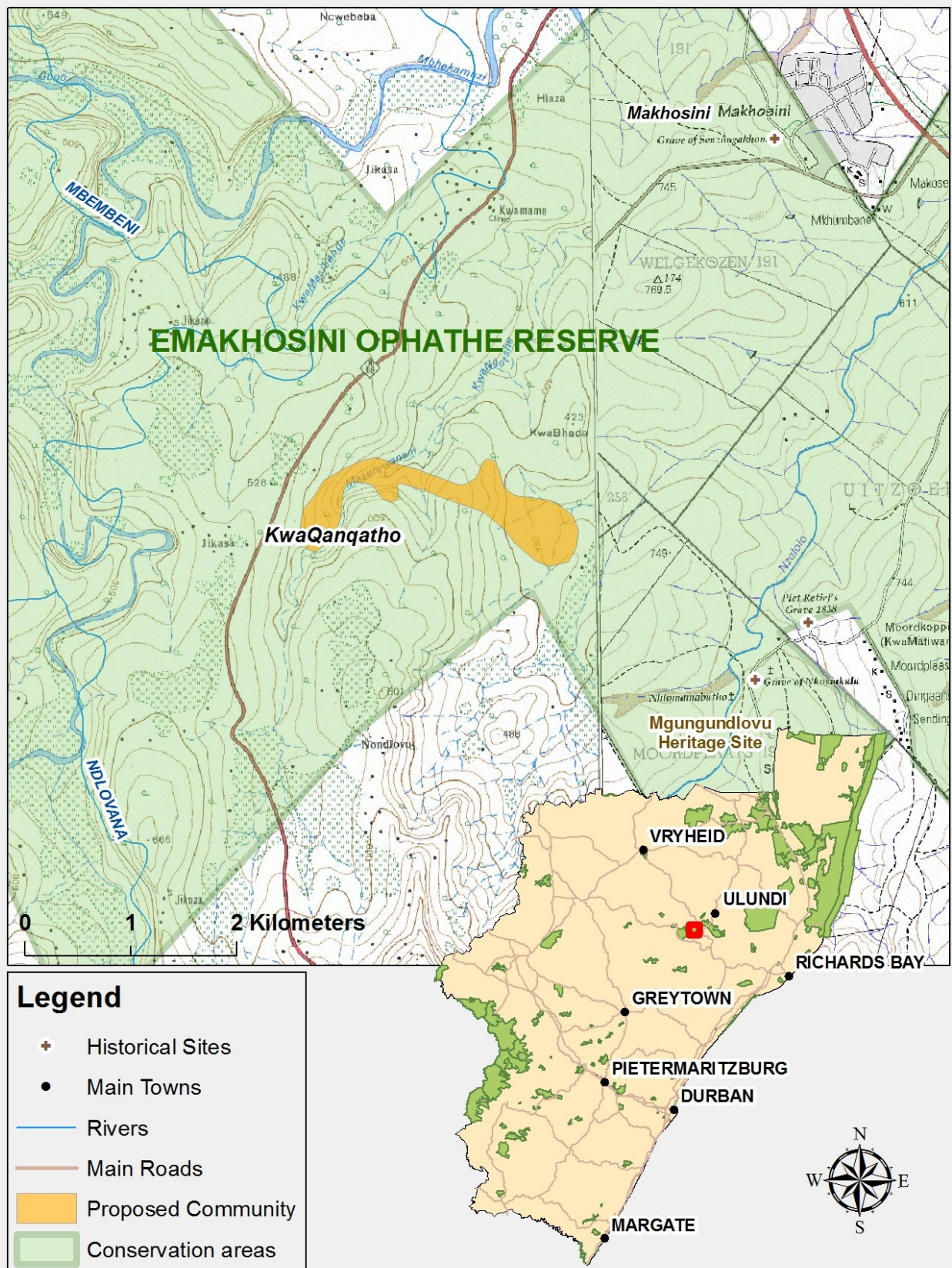
PROJECT NEED AND DESIRABILITY

Unlike large-scale commercial agriculture, small scale farming is both a source of household food security as well as income from sale of surplus. It is ecologically friendly and the market is usually local reducing carbon miles. Some claim that small scale agriculture can also be more productive than big commercial agriculture. Small scale agriculture improves local economic development as it is a source of employment. It also retains a large portion of the income in the community as the market is mostly localised. Generally, the produce is first used to feed the household and then the surplus is sold. Thus small scale farming contributes to food security.

Currently farming is not widely practiced in the project area as challenges with wild animals and free roaming livestock make it very difficult for the community to harvest any substantial yield. Economic opportunities are very limited and access to market is far. Members of the household generally leave the community to find employment opportunities, further putting strain on the community and family members that remain. The only real possibility for income generation is farming.



Figure 2: Traditional Zulu Rainbow Maize grown & harvested by Mthimkhulu Family for the pilot project



NO-TILL GRAIN FARMING, AGROFORESTRY AND AGRO-ECOLOGY

The project will promote traditional and agro-ecological methods of farming such as the use of No-till, intercropping and agroforestry. No-till can be defined as leaving the soil undisturbed from harvest till planting. No-till planters that are used cause minimal soil disturbance compared to conventional farming and there is no tillage-turning over or agitating of the soil.



Figure 3: No-till Maize Growing in mulch

can go full no-till & organic.

Agroforestry is the incorporation of tree farming in to a mixed production. The farm layout will seek to create swales that are tree planting systems. There is an option in the budget for purchase of trees. This will divide the plot on contour with the grain crops grown in-between. Other crops such as pigeon pea (hardy pulse shrub) and cow pea (dry land bean) can be intercropped with millet, sorghum and maize decreasing pestilence and diversifying food for the nutrition of the household.

FARM LAYOUT & INFRASTRUCTURE

Perhaps the greatest challenge the community faces is the lack of proper fencing. Livestock and wild animals devastate crops and discourage farmers from any serious attempt to farm. The small holdings are 3-5Ha on average. 2ha parcels of each of the homesteads will be fenced with a multi strand electric fence of 1.5m in height, with solar powered energizers. Each farm plot will be designed by a specialist to harvest rain runoff to increase dryland yields and encourage contour strip farming and in combination with the organic no-till practices will lay down the foundation for conservation agriculture to be practiced by the farmers. Once the grain is harvested it will be bagged in sacks and stored in several repurposed shipping containers installed strategically throughout the community. *Please see farm layout example in appendices.*



Figure 4: 2 Wheel Tractor with No-Till Maize Planter

FARMING EQUIPMENT

The total farmed area for the project is 50Ha. Two small tractors are necessary to prepare each field in time for the rain each year. Several tractor implements, both conventional and no-till have been selected with the advice of professionals as well as several low tech small scale farm implements like rolling punch planters and wheel hoes that can be used by any of the project partners without difficulty or much training and that would greatly speed up manual tasks such as planting (other than the tractor planting or when the tractor is down) and weeding.



Figure 5: Push Planter for Maize & other seed

IMPORTANCE OF DRYLAND CROPS TO SMALL SCALE FARMERS

Subsistence farmers in Africa and abroad living in arid or semi-arid areas rely heavily on dry land crops such as Sorghum, Millet and Dry beans. These crops can perform very well in poor soil and drought conditions and contribute greatly to the overall calorie intake and food security of those living in these areas.

The combination of dry beans and grains such as sorghum or millet works very well together and is used by African farmers. The dry beans builds the soil and adds back nitrogen.

ESTIMATED VALUE & IMPACT

Based on “KwaZulu-Natal Agriculture and Rural Development” dryland estimates on maize, sorghum and dry beans the value the project will have to each project participants homestead annually, based on 2 Ha. *Profit is net after all input costs such as tractor fuel etc.*

Crop	Space Allocated	Tons/Ha	Profit/ton	Amount
Maize	0.75	6	R 3,100.00	R 13,950.00
Sorghum	0.75	5	R 5,889.00	R 22,083.75
Dry Beans	0.5	0.75	R 8,778.00	R 3,291.75
Total				R39,325.50

Assuming the homestead has 5 members (according demographic statistics) and the annual consumption of grain is 150kg's per capita. There would be a large surplus of 5250 kg's for selling, just on maize.

OFF TAKE AGREEMENTS

Two companies/organizations have pledged in writing to purchase the surplus grain-sorghum and maize from the farmers. *Please see letter in Appendices*

CURRENT STATUS OF PROJECT

A pilot plot has already been fenced and farmed with beautiful traditional varieties of sorghum and maize. Funding was raised for a mini silo and maize thresher. The harvest was good and the grain will be purchased by Brakenhill Distillery. A meeting was held in April 2019 with the community to assess their interest and needs. The interest was overwhelmingly positive, in part due to the success of Mthimkhulu family. The need for fencing was raised as the most critical challenge to farming.

DEMO FARM

The Mthimkhulu family's homestead will be used as a demonstration farm to show case to the rest of the community what can be fully achieved. Apart from the mixed grain and dry bean productions the farm will also demo swales planted to fruit & nut trees and other multipurpose and income generating plants; small chicken yard for eggs; market vegetable garden and ultimately bee hives and a seedling nursery.



Figure 6: Threshing of maize for 2019 harvest

CAPACITY DEVELOPMENT

The project has included the consultation of an experienced No-Till farmer from the Free State



Figure 7: Part of this year's rainbow maize harvest in Agro-ecological farming. Through the

Mr Pieter Beneke. He will make an initial visit to the site at the beginning of the project and provide basic training on the equipment and no-till grain farming. He will also create a simple farming/crop plan based on his assessment that the farmers can follow and will be available throughout the project as an advisor. The budget also includes an agro-ecological farming mentor to provide mentorship on a once monthly visit to each homestead farm to provide support in establishing conservation agricultural practices, to oversee the implementation of the crop plan and helping address any challenges of pestilence or disease in the crops throughout the season. There is an additional option in the budget for a 5 day course

the community will develop capacity in the following areas:

- ❑ Farm fencing skills
- ❑ No-till farming methods
- ❑ Agro-ecological & organic farming practices
- ❑ Diversifying crop production for nutrition, land care & income generation
- ❑ Permaculture farm layouts
- ❑ Micro enterprise

Appendix:

Budget			
	Units	Cost	Amount
Tractors			
MASSEY FERGUSON 5455 4wd 78kw 2nd hand Tractor	1	R 281,750.00	R 281,750.00
MASSEY FERGUSON 440 2wd 61kw 2nd hand Tractor	1	R 189,750.00	R 189,750.00
MASSEY FERGUSON 5709 4wd 68kw New Tractor	0	R 557,750.00	R -
MASSEY FERGUSON 2635 2wd 55kw New Tractor	0	R 373,750.00	R -
BCS30 2wheel Tractor	1	R 37,000.00	R 37,000.00
Impliments			
JBH New 8 Ton Trailer	1	R 143,750.00	R 143,750.00
AGRITEC 174 2nd hand 2row trailed maize harvester.	0	R 253,000.00	R -
JBH New Hydraulic 18 Disc Harrow	1	R 80,385.00	R 80,385.00
JBH New 3m konskilder with roller	1	R 48,875.00	R 48,875.00
JBH New 5 tine Ripper	1	R 45,022.50	R 45,022.50
JBH New 1000l Fertilizer spreader	0	R 33,235.00	R -
JBH New 600l Sprayer with 12m boom	0	R 30,475.00	R -
JBH New Back hoe	1	R 87,975.00	R 87,975.00
M&M New 500l diesel bowser with 12v pump, meter + filter	1	R 34,488.50	R 34,488.50
ROVIC 2nd hand 5ton trailed Lime Spreader	0	R 143,750.00	R -
Edenquip 2 wheel tractor maize planter	1	R 21,000.00	R 21,000.00
No Till Tractor Impliments			
Pickets 4 row maize planter	1	R 121,900.00	R 121,900.00
10 interow planter(for cover crops)	1	R 179,400.00	R 179,400.00
Tools & No Till Small Scale Impliments			
Rolling Punch Planter	2	R 4,191.00	R 8,382.00
Fine seed Planter	2	R 3,174.00	R 6,348.00
Lennys Wheel Hoe	1	R 2,295.00	R 2,295.00
Spades	22	R 200.00	R 4,400.00
Wheel Barrows	22	R 500.00	R 11,000.00
Picks	22	R 200.00	R 4,400.00
Forks	22	R 200.00	R 4,400.00
Rakes	22	R 150.00	R 3,300.00
Hoe	44	R 150.00	R 6,600.00
Home DIY-Broadfork & push Hoe's	5	R 3,000.00	R 15,000.00
Tractor Running Costs(1 season)			
Fuel/2Ha	22	R 4,200.00	R 92,400.00
Labor	22	R 800.00	R 17,600.00
Insurance on tractor & impliments	12	R 5,000.00	R 60,000.00
Maintenance & servicing	1	R 10,000.00	R 10,000.00
Maintenance kit	1	R 2,500.00	R 2,500.00
Specialist fees,mentorship & training			
No-Till Farmer Mr Piet	4	R 2,000.00	R 8,000.00
Agro ecology specialist	36	R 1,500.00	R 54,000.00
5 Day-Agro Ecology course	0	R 30,000.00	R -
Storage & packing			
Container 3m x 6m	12	R 15,000.00	R 180,000.00
Delivery cost	12	R 9,000.00	R 108,000.00
Stitching machine	2	R 13,800.00	R 27,600.00
Thread	10	R 1,050.00	R 10,500.00
Bags	3000	R 8.00	R 24,000.00
Grain Moisture tester	1	R 7,500.00	R 7,500.00

Fencing				
Fencing for 25 x 2ha plots. Including training & oversight. Community to provide labour for instalation. Timber poles 1.5m high Electric fence. Powered by energizer in theft proof box and solar panel.		1	R 838,846.00	R 838,846.00
Additional wire & poles for tree protection		0	R 2,000.00	R -
Additional wire & poles for tree protection for demo garden		1	R 2,500.00	R 2,500.00
Farm Layout				
Site assessment		22	R 600.00	R 13,200.00
CAD drawing		22	R 1,000.00	R 22,000.00
Supervision-swale/tree planting/field block layout		22	R 1,400.00	R 30,800.00
Seed				
Maize		22	R 1,400.00	R 30,800.00
Sorghum		22	R 1,400.00	R 30,800.00
Cover crop Autumn		22	R 1,400.00	R 30,800.00
Cover crop Summer		22	R 1,400.00	R 30,800.00
Other		22	R 1,000.00	R 22,000.00
Organic Amendements/Chem				
Lime		22	R 1,000.00	R 22,000.00
Fertilizer		22	R 1,000.00	R 22,000.00
Herbicide		22	R 1,000.00	R 22,000.00
Pesticide		22	R 1,000.00	R 22,000.00
Fruit Trees & Plant Material				
Citrus qty 3150		0	R 198,000.00	R -
Macadamia qty 1320		0	R 79,200.00	R -
Avocado qty 660		0	R 300.00	R -
Other Plant Material Indigenous Fruit etc		22	R 1,000.00	R 22,000.00
Delivery		0	R 40,000.00	R -
Fruit Trees/Plants for Demo Farm				
Citrus		150	R 60.00	R 9,000.00
Macadamia		100	R 60.00	R 6,000.00
Avocado		30	R 300.00	R 9,000.00
Other Plant Material Indigenous Fruit etc		1	R 2,000.00	R 2,000.00
Delivery		1	R 4,000.00	R 4,000.00
Chicken Yard For Demo Farm				
Chickens		200	R 150.00	R 30,000.00
Protection & nesting area		1	R 40,000.00	R 40,000.00
Borehole Pump & Tank For Demo Farm				
Solar Pump		1	R 40,256.00	R 40,256.00
10000lt Tank		1	R 11,300.00	R 11,300.00
Pipeing		1500	R 5.00	R 7,500.00
Tap stands		5	R 300.00	R 1,500.00
Other				
Admin		0	R -	R -
Travel		31	R 1,000.00	R 31,000.00
Accomodation		1	R 36,000.00	R 36,000.00
Communication		3	R 1,000.00	R 3,000.00
Delivery		1	R 10,000.00	R 10,000.00
Total				R 3,342,623.00



BrackenHill

CRAFT DISTILLERY

30 November 2018

Oscar Mthimkhulu
eMakhosini Heritage Park Community

RE: OFFTAKE OFFER

The overarching ethos of BrackenHill Craft Distillery is to incorporate our African heritage into producing the finest quality spirits. We will be one of a few distilleries in South Africa that focusses on using ancient heirloom varieties of African grains in our fermentations that will form the basis of our Gin, Vodka and Whisky. Our varieties of maize, sorghum and millet will allow a kaleidoscope of flavours and aromas to mix with more traditional grains to offer an infinite recipe for our selection of products.

As such we seek partner with local rural communities to grow Zulu Rainbow Maize and local varieties of Sorghum and Millet. This needs to be a personal relationship between us and the growers as we intend following the processes closely and using this as an intimate part of our social media marketing of our products. A true 'Grain to Glass' involving local communities.

Our requirements for 2019/2020 growing season will be:

12 Tons Zulu Rainbow Maize
3 Tons Sorghum
3 Tons Millet

We offer the **SAFEX price** at harvest time plus a premium of **R1000** per Ton

We look forward to establishing long term relationships and growing the quantity of African grains we use per annum.

Regards,

Signature removed from public copy

Carl Grossmann