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Commercial Agricultural Production in Tanzania: Mountainside Farms Limited

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Abstract

Mountainside Farms Limited (“MFL”) is one of the largest commercial cereal farming operations in Tanzania. Based on the slopes of Mount Kilimanjaro, MFL owns approximately 9,500 contiguous acres (3,845 ha) of which 6,350 acres is under cultivation between wheat and malting barley, with the remaining land used for sheep rearing, indigenous forest and infrastructure. MFL is a strategic supplier of malting barley to Tanzania Breweries Limited (“TBL”), part of the SABMiller plc group, supplying up to 30% of the brewer’s locally sourced Barley. Started in 2000 by Managing Director Luke Edwards, the key to the company’s success has been its scalable management platform – allowing significant production volume to be achieved in a region where average farm sizes are typically 1-3ha. This management platform is a combination of both commercial production systems (classically seen in developed agricultural markets such as Australia and the US) – allowing external institutional capital to be invested, and of local Tanzanian agricultural practices (a significant employment and training program is undertaken by the company), allowing MFL to operate successfully with local communities and stakeholders. The company is now looking at further investment opportunities to capitalize on the management platform they have built; options considered by the company’s board of directors include diversification on MFL’s land on Kilimanjaro by planting avocados to feed into a local pack-house that exports to supermarkets in Europe and starting an out-grower barley program in other areas of Tanzania also suited to Barley production.

Keywords: Tanzania, Africa, agribusiness, barley

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Company Background

Located on the Western slopes of Kilimanjaro between the towns of Arusha and Moshi in Northern Tanzania, MFL's land holdings were originally part of eight farms established in the 1950's by ex-Royal Air Force pilots. Those farms were then nationalized during Tanzania's socialist period before being privatized in 1994. MFL was formed in 2000 as a joint venture farming company with its offtake partner Tanzania Breweries Limited ("TBL"), a subsidiary of brewing giant SABMiller, and the company's farmer-operator Luke Edwards, a long-term Tanzanian resident farmer.

The company's 9,500 acres (3,845 ha) on the slopes of Mount Kilimanjaro are held through a 99 year lease with approximately 50 years remaining on the current leases. Planted out over the past decade, the farm is now fully developed and operational, benefitting from excellent soils and rare climatic conditions for the region (altitude of 2,000m above sea level) as well as good infrastructure & machinery from significant shareholder investment over the years. Production is split between the two rain seasons; starting in November (short rains) and April (long rains) respectively, with the area planted split one-quarter and three-quarters between short rains and long rains. Today the company cultivates 5,210 acres of barley and 1,030 acres of wheat annually, as well as maintaining a flock of 976 ewes. MFL employs six full-time managers, as well as over 150 additional employees as farm hands, technicians and machine operators.

As the largest of only four commercial barley producers in Tanzania, MFL's malting barley is an input source for one of Tanzania's most important industries – TBL is amongst the largest public companies and employers in the country. Currently, Tanzania, and Africa as a whole, remain a net importer of malting barley. Whilst demand for beer is experiencing double digit growth as consumers switch from the informal beverage sector, the malting plants are unable to secure sufficient malt quality barley for their production and rely on imports. This provides a consistent growth-market for MFL's produce with domestic production unable to cope with demand. For this reason, MFL has historically achieved a significant premium on world market prices as logistics and supply chain management tend to be costly in Africa when importing grain – giving MFL a significant price advantage producing barley in close proximity to the TBL maltings.

Regionally, in what are highly fragmented agricultural production industries made up of small-scale producers, MFL is able to produce at scale due to the contiguous nature of its land, and the significant capital invested to develop management capacity and employ modern farming techniques. Having had institutional investors since the company's formation and, raising money from an external private equity group in 2008, MFL has developed robust internal controls and reporting procedures. The Company is SRI compliant and has undertaken several initiatives to generate positive externalities in its sphere beyond its vital role in boosting local skills and generating employment. MFL has provided funding and support to an EU supported water supply project to bring water from high up in the mountain through a gravity supply pipeline to several nearby villages and has also been working closely with the World Bank on recent research into responsible agricultural investment practices.

Private Equity Fundraising and Key Achievements

In 2008, the company raised capital from a specialist agribusiness-focused private equity fund in order to finance further expansion on the company's land holdings and access international knowledge and expertise in order to further enhance productivity. The global fund acquired a majority shareholding in MFL, having invested in MFL through the acquisition of both primary and secondary shares of the Company.

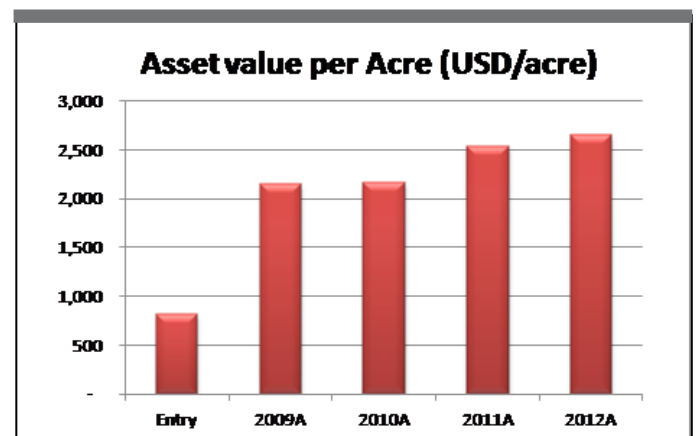
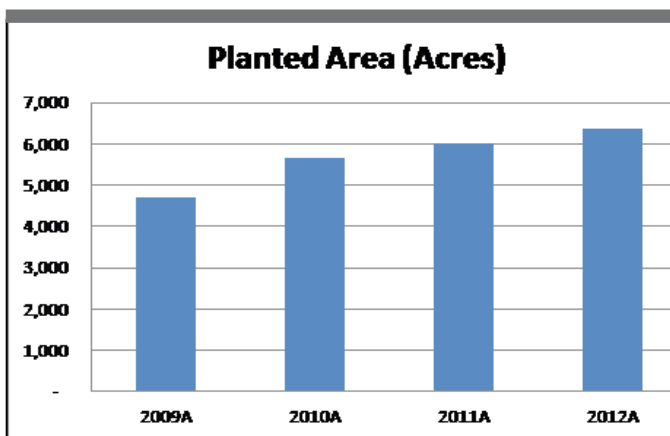
MFL's Key Achievements Over the Last Three Years

Since the private equity investment, management focused on maximizing both the asset value and income generating potential of MFL by investing in plant and machinery as well as land transformation of unused land to arable land and the removal of contours to further pursue operational efficiency. Capital expenditures have included machinery (\$700,000 USD), vehicles (\$ 100,000 USD), buildings and improvements (\$ 200,000 USD), and other expenditures of (\$ 2,000,000 USD) building management capacity and implementing systems. In addition management chose to convert operations to zero-till farming to bring the following benefits to the company:

- Conserve moisture. Low rainfall is the most significant constraint to increasing production and yields.
- Conserve soil. Volcanic soils on steep slopes are vulnerable to erosion.
- Decrease yield variability and improve reliability of production.
- Decrease up-front cost risk exposure – no heavy cultivations. ie. expenses, before start of the season
- Reduce carbon foot-print. Less diesel is used with zero-till and by not inverting the soil (cultivating) less soil carbon is released into the atmosphere. As the soils reach their “equilibrium” state less fertilizer will also be required.

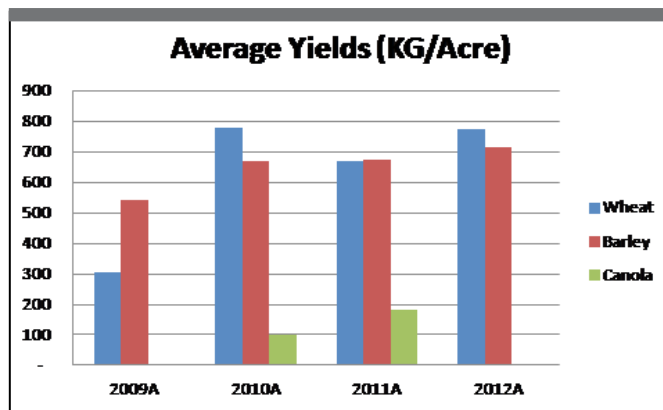
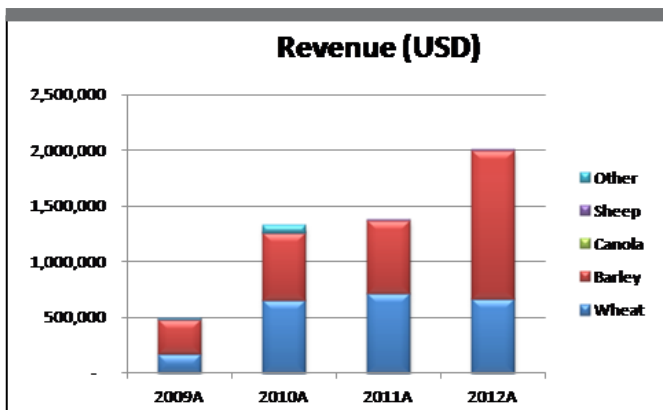
Measurement of some of the key improvements made to date are shown in the diagrams below:

Asset development. Converting bush land to arable land – planted area has been increased by over 30% since investments began in 2009, resulting in both revenue growth and significant capital gains. Management continues to enhance the existing asset with a planned arable land conversion program and improvement of existing farm infrastructure and facilities.



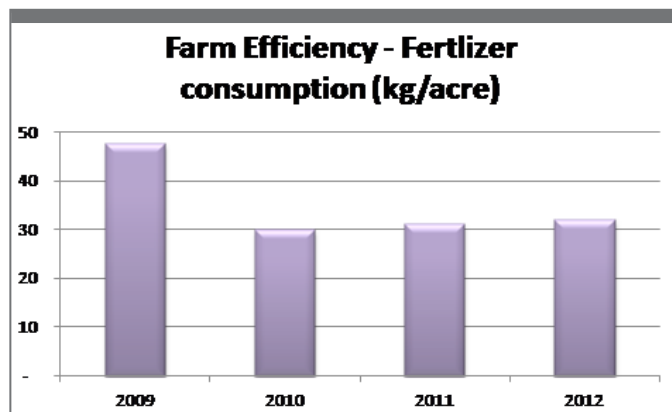
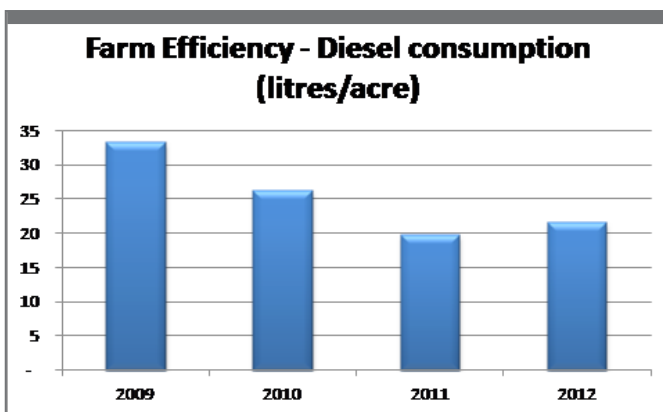
Note. Conversion to zero-till farming usually follows a J-curve pattern over a 5-10 year period whereby yields fall initially before improving.

Revenue Growth. Revenue increased almost 300% during 2009-2012 (Note: 2009 was an exceptional year as Tanzania experienced the worst drought in 40 years). This is mainly attributable to increased land under cultivation and yield improvement - conversion to zero till farming to increase soil moisture retention and reduce erosion.



Note. Conversion to zero-till farming usually follows a J-curve pattern over a 5-10 year period whereby yields fall initially before improving.

Increased Operational Efficiencies. Shown in the table below, fuel and fertilizer usage per acre has been reduced significantly between 2009 and 2010 after conversion to no-till farming, which allowed the reconfiguration of fields into larger blocks generating increased operational efficiencies.

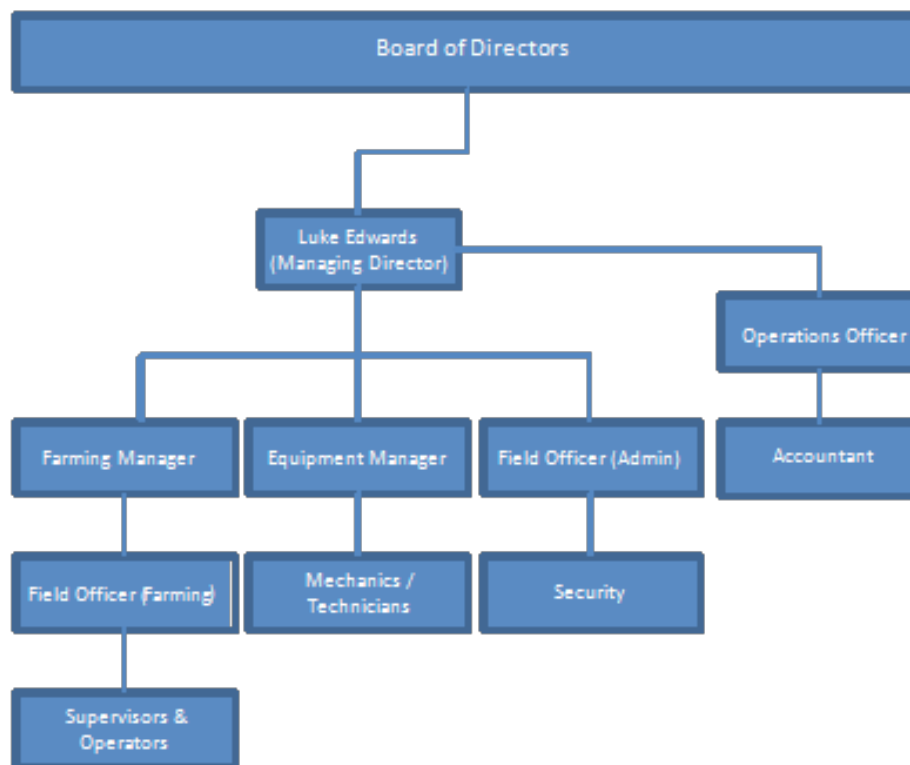


Current Management Structure

MFL’s management has a proven track record in achieving targets with regards to budget management, adherence to planting schedules, improvement in operational and reporting controls, conversion to zero till farming and land conversion. Such management characteristics are rare in the agricultural production industry in Africa which has been capital-starved and where very little has been invested in training and the development of corporate structures.

Luke Edwards, the current Managing Director of MFL, has developed MFL since its inception over the past 14 years. He has deep experience managing and developing multiple farms in Tanzania since the early 90’s and is a recognized leader in wheat/barley production in Tanzania. He currently owns an equity stake in MFL and lives with his family on the farm. In addition, he is supported by six managerial staff (three senior and three junior managers) with a clear segregation of responsibilities in covering administrative functions, farming operations and management of equipment and farm infrastructure.

The chart below shows the management structure of MFL:



Challenges

With almost no acreage under production, no-till farming is an unknown and rarely adopted concept in Tanzania as compared to countries such as Brazil where over 70% of production is no-till. Due to no-till farming methods requiring large-scale transformation of pre-existing operations, the change required a significant buy-in from the company's mostly Tanzanian and South African staff – for whom the practice was unknown and, in some cases, treated with skepticism. This was overcome with intensive training workshops demonstrating no-till systems in other Barley growing regions where climatic conditions were similar to those of MFL. The company's new agribusiness-focused shareholder was able to deploy its own agribusiness experts from Australia to help the company with the implementation, training and monitoring of the move to no-till.

Significant jurisdictional issues also present risks for MFL's development. As commercial agri-production operations are uncommon in Tanzania, there is both a lack of depth in the agricultural supply chain and challenges emanating from poor and, at times, misguided government policy. The weak supply chain results in a multitude of operational difficulties from obtaining bulk volumes of fertilizers and pesticides to finding spare parts for large machinery. Weak government policy presents challenges obtaining approval for new improved seed varieties and the registration of modern fertilizers and pesticides for import. In spite of agricultural production arguably being Tanzania's most important industry in terms of employment and growth potential, there is little government support for infrastructure improvement nor investment into research and development. Pioneering companies such as MFL need to lobby for improved policy and support from the government without a strong industry group. This situation has been improving as more investors look to enter the market and as the government realize the difference that such businesses are able to make to local communities and small-scale farmers who benefit from improved agronomic knowledge, access to better farming inputs as well as lucrative value-add markets.

Strategic Issues

The company's operations in Kilimanjaro are now fully developed and are looking to enter a new phase of growth through various expansion plans. Options discussed by the board include diversification of their home base on Kilimanjaro by planting avocados to feed into a local pack-house that exports to supermarkets in Europe, or moving further afield starting new out-grower barley programs in partnership with TBL in other parts of the region suited to Barley.

TBL being the major buyer of malting barley in Tanzania is currently faced with a shortfall of between 28,000 to 48,000 tons of malting barley per year. The deficit is currently imported but with increasing world market prices, the brewery targets to supply all its needs locally and even supply their breweries in the greater Eastern Africa region from Tanzania. In order to scale up cereals production to meet TBL's demand in Tanzania, management believe that the best way forward would be through a hub and spoke model involving smallholders to drive this production, as smallholders make up such a significant portion of agricultural production in Tanzania and can also allow scale to be achieved quickly.

The hub and spoke model for production will be based on setting up a nucleus farm surrounded by smallholders, with the nucleus farm acting as a central service and technical provider in order to drive production. An example of this would be harvesting services which could be provided to the smallholders to improve their farming efficiency, thereby allowing for increased acreages and higher yields. This would involve setting up hubs or "catalyst" farms in the right areas, with an average farm size of c. 800 ha. In the initial period, the hub and spoke catalyst farm and smallholder program would have to be funded until sufficient scale is obtained. Once the hub and spoke operations have stabilized, additional revenue capture can be made through the provision of logistics services such as acting as the central barley delivery point in the area and providing grain handling and storage facilities for TBL.

Besides scaling up of its cereals production, the board together with management are also evaluating various options to transform MFL's Kilimanjaro base into a diversified agribusiness with exposure to the animal protein market and high value crops. Specifically, the Company is evaluating the merits of entering the protein business to take advantage of the booming demand for meat driven by East Africa's emerging middle class and its booming tourist industry, as well as further irrigation potential for the planting of higher value crops such as avocados and hybrid seed maize. In addition to high value markets for the produce, there are also synergies to be captured with MFL's current cereals production as feed materials can be sourced for the protein business and rotations with higher value crops can potentially improve the farm's overall productivity.

Looking Ahead

With its strategic advantage lying in its stable management platform that has already been established, the key to MFL's future is dependent on its ability to capitalize on the various expansion opportunities that exist in the East African agriculture industry, and execute on them. This is especially true in a rapidly developing country such as Tanzania, where there exists a rising middle class with fast increasing consumption, but underdeveloped production and supply chains to meet the rising demand for agricultural products