

# MORINGA TREE FUND

The Moringa Tree Fund allows institutional investors to invest in fixed income debt in order to mitigate desertification, to battle climate change, and to promote economic empowerment and gender equality in the developing world, by establishing farmers' cooperatives to grow and process moringa.

# **MORINGA**

"the miracle tree"

**Biological name** Moringa oleifeira

**Key Agricultural Features** Grows in dry regions Adapted to monsoon patterns Restores land and prevents erosion

#### BENEFITS

Nutrition: fruit, flower, leaves, seed

Medicine: fruit, flower, leaves, seed,

bark, wood, roots

Cosmetics: seed oil

Environmental: land restoration,

carbon sequestration

Additional uses: water treatment, animal feed, paper, rope etc.

#### GEOGRAPHY



Native to India, moringa has been proven to grow well in Africa.

The Moringa Tree Fund will invest first in Ghana. Future funds will invest in Rwanda and Tanzania. These countries were selected based on ease of doing business, climate and opportunity for creating social and environmental impact.

# MEET THE FARMER, A MOTHER NAMED AFI

Afi\* lives in the upper east region of Ghana with her husband and 3 children. While her husband is employed in a nearby farm, Afi finds herself in and out of work as demand for agricultural labor fluctuates. Household income is below the poverty line of \$1.25 a day, and Afi's children have dropped out of school to work on farms and help ends meet. With intensifying desertification and land degradation, agricultural yields continue to drop leaving families like Afi's in a vicious cycle of poverty and food insecurity.



Despite being one of top 6 economies in Africa and 2nd after Nigeria in West Africa, Ghana suffers from several issues common to developing African nations, including desertification, poverty, gender inequality and food insecurity. The upper east region of Ghana is particularly vulnerable due to its dry climate, degraded soil, and impoverished population. The region has a single monsoon season per year as compared to the two monsoons enjoyed by southern Ghana. 16% of the population in the north faces moderate to severe food insecurity as compared to the national average of 5%. Furthermore, higher rates of food insecurity and poverty persist amongst women as compared to men in Ghana.

## OUR SOLUTION

The Moringa Tree Fund will help farmers like Afi by financing moringa farms and processing in Ghana. Moringa trees, which are considered a "superfood" due to their extraordinary medicinal and nutritional value, will help improve local food security and health. Moringa trees thrive in arid areas and restore degraded land. According to studies, they also sequester carbon at a rate 20x higher than that of general vegetation. Furthermore, revenues from the expanding international market for moringa products will help alleviate poverty. This will mitigate poverty-driven issues like child labor. By making women an integral part of the plantation, the fund will also provide stable income to women, thereby improving their financial security and status.

To achieve this, the Moringa Tree Fund will partner with local organizations in Ghana, such as VPWA (Volunteer Partnerships for West Africa), to lease degraded land and machinery to farmers' cooperatives. By the end of the investment period, ownership of the land and the machinery will have transferred to the cooperative, empowering farmers in the process.

## POTENTIAL MARKET SIZE

Ghana land surface prone to degradation: 16.5 million hectares (69% of country's area) Ghana agricultural workforce: 6,400,000 (55% of total workforce) Global market for health foods: \$1 trillion by 2017 (growth of 29% over 2014)

Global market for natural beauty products: \$12 billion by 2017 (growth of 32% over 2014) Average annual moringa sales for fund: \$38 million or <0.01% of global health food & beauty

# PROJECTED IMPACT PER \$1 MILLION INVESTED

Area of land cultivated and restored: 60 hectares or 2 farms (30 hectares per farm)

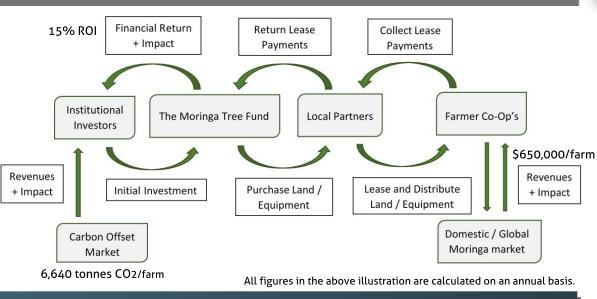
Total farmers employed: 20 farmers (10 per farm)

Female employment created: 8 women (40% women per farm mandated by fund criteria) Children protected from child labor: 32 children (average of 4 children per woman)

CO2 sequestered: 13,280 metric tons per year (6640 trees x 30 hectares x 2 farms)

\*Afi is a fictional character invented to illustrate the average female farmer's life in Ghana.

# THE MORINGA TREE FUND MODEL



# INVESTMENT CRITERIA AND MODEL

The Moringa Tree Fund will invite investments from institutional investors and use this to purchase plots of degraded land and moringa processing machinery in Ghana. The fund will partner with local organizations to lease both the land and the machinery to farmers' cooperatives, in return for yearly lease payments over a period of 10 years. To incentivize farmers to commit, the fund will broker the product sales of the first two years through FPA's. To circumvent lack of water or electricity, solar energy equipment and bore wells equipment will also be leased. Lease payments will cover principal and inflation-adjusted interest rate. By the end of this period, ownership for the land and the machinery will be transferred to the cooperative. In the event of default, land and machinery will be retained as collateral. Revenue from lease payments and from selling carbon offsets will be paid annually to investors net of management fees.

#### **Criteria:**

- Plots of land must be at least 30 hectares to support a minimum of 10 farmers.
- Each cooperative must support at least 40% women farmers.

#### Due diligence:

The Moringa Tree Fund will, through local partners and independent third parties, conduct field visits to ensure fund requirements are met, as well as to measure social and environmental impact metrics. The local partners will also be responsible for collecting lease payments and providing training and support.

#### **Environmental impact metrics**

Hectares of land restored and cultivated Metric tonnes of carbon dioxide captured

#### Social impact metrics

Number of farmers impacted
Number of participating female farmers
Percentage change in farmer net income
Jobs created in participating communities
Child labour rates in participating communities

Summary of Cash Flows	Annual, per fund
Lease payment from land & equipment:	\$10 m farm> investor
Revenue from carbon offset credits:	\$4 m carbon markets> investor
Revenue from Moringa products:	\$29m-\$66m moringa sales> farm

## MORINGA OLEIFERA



MORINGA TREES
FIGHTING DESERTIFICATION



PROCESSED GROUND MORINGA POWDER

## **RISK ANALYSIS**

#### **Credit Risk**

- Land and machinery collateral
- Cooperative structure
- Women more likely to repay debt

#### **Currency Risk**

- Currency forwards for lease
- Carbon offsets priced in USD

#### **Country Risk**

- Democracy
- 20 years of peaceful elections
- Ranked 4th in 'Doing Business' ratings in Sub-Saharan Africa
- Inflation adjusted lease payments

	Fund Structure	
	Asset Class:	Asset-backed fixed income debt
	Capital Structure:	100% investor funded debt
	Fund Size:	\$50 million
	Investment Size:	\$1 million - \$5 million
	Time Horizon:	10 year renewal periods
	Fee Structure:	3% on principal
	Target Rate of Return:	15% ROI (conservative estimate)
ı	Target Investors:	Institutional Investors
ı	Number of Farms:	100
ı	Target Geography:	Emerging Markets in Africa (Ghana)
	Total Land Area:	3,000 hectares