

# BRIDGES TO MALAWI

**OCTOBER 2021**



- 
- ▶ **Brian Lisse, MD**
  - ▶ **Associate Clinical Professor,  
Tufts University School of  
Medicine**
  - ▶ **President and Founder, Bridges  
to Malawi**

# BRIDGES TO MALAWI

- ▶ **Massachusetts based nonprofit dedicated to improving the health and welfare of the people of the Kasungu East District in Malawi, one of the poorest countries in the world.**





## ▶ **BRIDGES TO MALAWI**

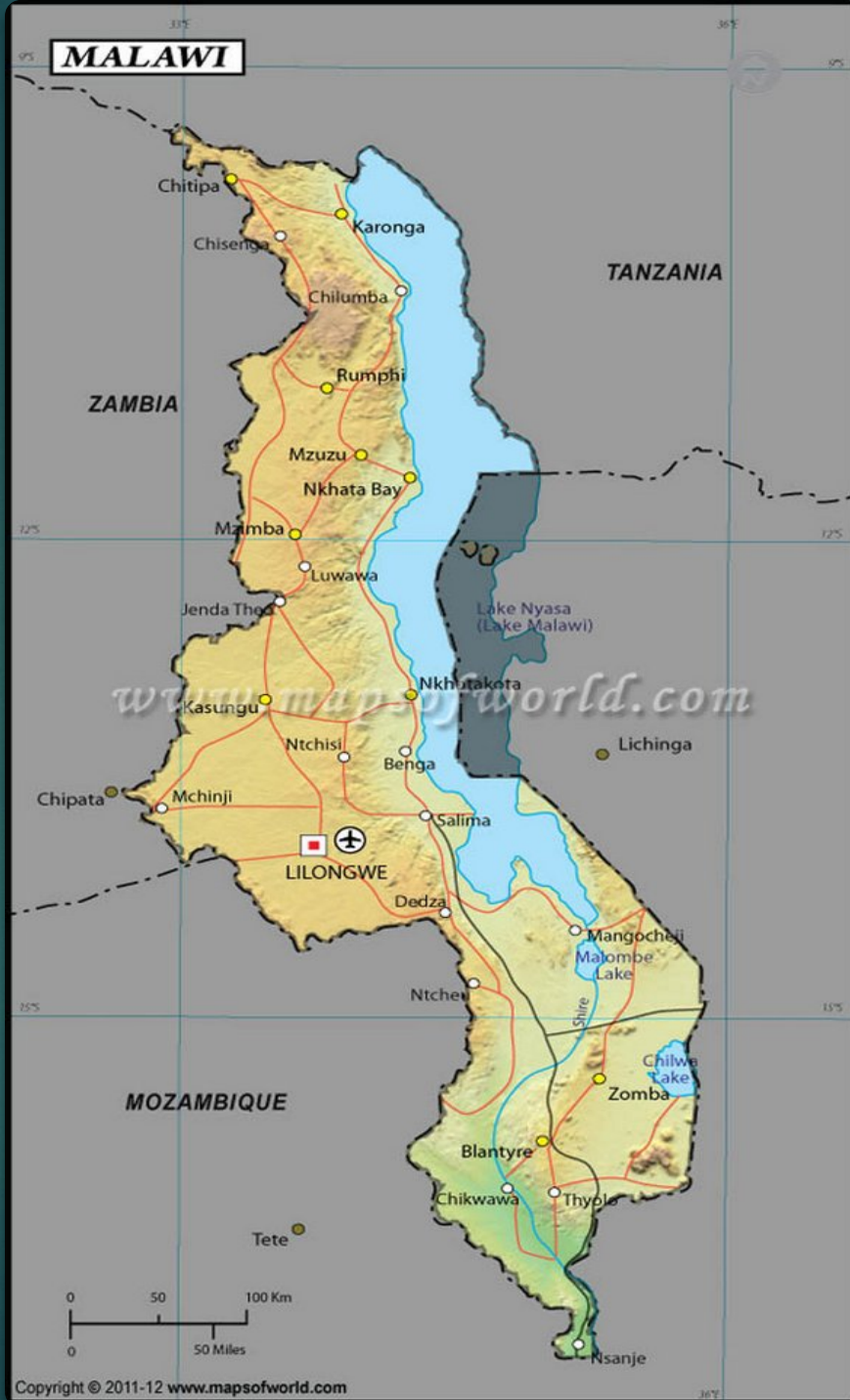
- ▶ **100% of all money raised by Bridges to Malawi goes directly to our efforts.**
- ▶ **Over \$125,000 spent thus far in 2021**
- ▶ **All board members work for free and pay their own way to Africa**
- ▶ **All administrative costs are paid for out of the pockets of the board members**















# ▶ ACCOMPLISHMENTS

# IRS Ended in 2018

Over 52,000 People Protected  
from malaria via Indoor  
Residual Spraying (IRS).  
Malaria rates decreased by  
85% in 18 villages

# COVID-19 PREPAREDNESS

- ▶ Constant communication between Peter Minjale and me about our preparations and experiences with COVID-19, including recommendations for how to prepare

We've spent \$31,600 for purchase of 6 oxygen concentrators, mask making and distribution, PPE, COVID 19 public education/outreach and handwashing stations.

- ▶ About **5894/61619** cases, **183/2284** deaths (as of Oct 27, 2020/Oct 3, 2021)
- ▶ 1<sup>st</sup> case April 3













# GOAT PASS-ON PROGRAM

- ▶ **526** goats donated 2014-2018
  - ▶ As of Oct 2021:
    - ▶ Over **10,000** farm families representing
    - ▶ More than **130,000** people
    - ▶ Have over **60,800** goats




**PHOTO 3:** BTM is changing families lives through women empowering by goat-pass-on program. Above is a family of Awali and Julita Anusa with their children from Kapinya village in Kasungu, rural Malawi posing following receipt of goat with support from BTM.

More reports on goat-pass-on project with support from BTM are yet to come.

Regards,

Peter.

- 
- ▶ A goat yields **10** times its body weight in **Milk** in a year
  - ▶ Providing **1 ton** of **Protein** for its family
    - ▶ As well as
    - ▶ **Manure**
    - ▶ **Transport?**
  - ▶ And ultimately **Meat and Hides**



# DAIRY COOPERATIVE PROJECT

## Kadsikizi Malawi

- ▶ **2019:**
- ▶ 1) Constructed Milking Parlor
- ▶ 2) Constructed Kraal
- ▶ 3) Dug Borehole (well)
- ▶ 4) Plumbed system with solar powered pump to ensure regular supply of water for cattle
- ▶ 5) Established Dairy Cooperative of 24 local farmers
- ▶ 6) Initiated training in best dairy practices
- ▶ **Cost: \$68,741**

# MINJALES VISIT MASSACHUSETTS AND WISCONSIN DAIRY FARMS











# Kraal under construction





# Leon and Adeline Kochman; Morris, Allan, and Kitty Lisse Kraal





# 5000 Liter Water Tanks



# Ernest and Alma DeRuyter Milking Parlor









# Dairy Project Solar Power



# Dairy Cooperative Project

## Kadsikizi, Malawi

- ▶ 2020:
- ▶ 1) 30 Open Heifers (26 Holstein which produce 20-30 Liters of milk/day, 4 Friesian, which produce 10-15L milk/day) all Malawi born and raised purchased near Blantyre and transported to their new home at Kadsikizi
- ▶ 2) All animals vaccinated
- ▶ 3) Dairy Cooperative farmers trained in best practices and artificial insemination

# AI

4) Liquid Nitrogen cans and frozen semen “straws” purchased

5) Artificial insemination begins:

- ▶ A) 1<sup>st</sup> attempts not successful
  - ▶ B) 2<sup>nd</sup> attempts successful in 25/30 cows
- 
- ▶ Total Cost Dairy Cooperative 2020: \$ 63,350



# Artificial Insemination Training Seminar



# DAIRY PROJECT

- ▶ 2021: \$83,000USD spent so far
- ▶ 19 calves, 9 FEMALES/7 MALES
- ▶ Milk Production from our Holsteins and Friesians: 8-15 liters/day (prior production 1-2L/day from the local African Zebu cow). Avg milk price per liter is about 50 US cents per liter.
- ▶ Per Capita income Malawi (2019) \$440USD
- ▶ Avg cow produces milk about 300 days/year



# DAIRY PROJECT

- ▶ So farmer income **before** our dairy project was about **\$300/year**
- ▶ From our donated cows, avg income **now \$3,450/year**

















# DAIRY COOPERATIVE PROJECT

## 2021 In Process

- ▶ 30 more cows to be purchased this year at a cost of \$500/cow.
- ▶ We have \$11,500 pledged so need \$3,500 more
- ▶ 6 -10 cows will be kept on our demonstration farm
- ▶ Milk Chiller tank on its way from UK
- ▶ Pasteurizing Unit on its way from China
- ▶ Plumbing and building and solar power for above as well as back-up generator, etc all done

# DAIRY COOPERATIVE PROJECT

## 2021 In Process

- ▶ And then there's sex semen
- ▶ On its way to Malawi right now
- ▶ \$7100 (includes shipping and liquid nitrogen tank) and 380 straws
- ▶ Each straw = 1 opportunity to inseminate a cow
- ▶ Sex semen means 85-90% chance that each resultant calf will be a female.
- ▶ Males are much harder to get milk from



# DAIRY PROJECT

## The Future

- ▶ Initial Target is **180** COWS in the cooperative, but this is a pass on program, so numbers will eventually be much higher
- ▶ Infrastructure: We still need a yogurt making system and a packaging system with estimated cost of about: **\$20,000**

# DAIRY PROJECT

## The Future

- ▶ Improve per capita income from **\$440 to over \$3,000** for thousands of people by providing economic opportunities that currently don't exist in the area as well as increased nutrition to thousands by making milk more affordable and available.
- ▶ Our demonstration farm will become the equivalent of a **local agricultural college**. It will both provide dairy products free of charge to the needy and sell dairy products to those who can afford to pay in order to make the project self sustaining.
- ▶ We hope to have our farmers sell some of their milk to the government at a reduced price, thus ensuring a stable reliable market. The government would then provide **free milk in the primary schools**.



# Boniface Chikufenji, Malawi Government Veterinarian

- ▶ “Honestly speaking, I have personally witnessed, implemented and monitored various Livestock Development programmes in Malawi but this particular one at Mtunthama under K-2 TASO especially the dairy project under Mr Minjale is and has been brilliant in design, implementation as well as monitoring. I have no doubt whatsoever that this will bring great impact than any other Livestock projects I have seen in Malawi.”

# CHICKEN PASS-ON PROGRAM

- ▶ **Since 2019:**
- ▶ **790 donated altogether**
- ▶ This means we are providing extra protein and income for about **185** families, a total of approximately **1300** people.
- ▶ We purchased an incubator and built a brooder building in 2021 with plans to start purchase and hatch 300 eggs soon. This will bring our costs down significantly from about \$5 per chick to about \$2 an egg









# Wello Water Wheel



# Wello Water Wheel





# Wello Water Wheels

- ▶ **700** shipped from near Mumbai to Dar Es Salaam, Tanzania
- ▶ Then on to Mtunthama, Malawi.
- ▶ Cost: **\$32,000** (\$25 per Water wheel, includes shipping costs and import duties and we bought the container too)
- ▶ The container cost **\$2,000** and is being used as a combination of storage facility and office space.

# Hyundai Bangkok





# Water Wheel Future?

▶ Factory in Malawi?

# WATER BORN DISEASE PREVENTION

Every year the 6 month rainy season brings a host of diarrheal and other GI illnesses which kill large numbers of people, especially small children.

This can be prevented by providing chlorine to make drinking water safe until such time, if ever, that clean safe water systems like ours in the US can be provided.

BTM was asked to provide sufficient funds to chlorinate enough drinking water for **150,000 people for 6 months**.

**Anyone want to guess the cost?**



# WATER BORN DISEASE PREVENTION

About **\$13,500USD**

- ▶ We need about **\$10,500USD** by early November for this, but we'll get it done!

# Bamboo

- ▶ **9800** planted and about **6450** have survived
- ▶ Why bamboo? Renewable resource to minimize deforestation
- ▶ The future: A bamboo plantation? Can propagate from cuttings or root clump division of existing plants.











# REFORESTATION

- ▶ **2019:**
- ▶ **80,000** trees planted

**2020:**  
**200,000** more trees planted

**2021:** Plan for at least **200,000** trees more at cost  
of **\$6500**

















# IRRIGATION/BOREHOLES

- ▶ **3** Boreholes drilled in 2020, including **1** at Chambwavi, where we just finished the girls' dorm
- ▶ **2** more planned for this year.

# Artemisia annua

- ▶ Imagine that you could grow a plant in your garden that would prevent you from getting whatever disease scares you the most...
- ▶ Diabetes, cancer, heart disease, whatever...



# Artemisia

► Be pretty amazing, wouldn't it?

# Artemisia

- ▶ Well there is such a plant for malaria.
- ▶ Artemisia annua
- ▶ Its leaves have more than 20 antimalarial compounds, 1 of which is the source of the current go to drug to treat malaria





# Artemisia

- ▶ In 2019 we planted **1500** of these Artemisia plants in Malawi
- ▶ All the farmers had to do was once a week drink tea made from the crushed up leaves of the plant.
- ▶ And their chances of getting malaria went way down!
- ▶ We're currently protecting about 9,000 people from malaria in this way with a hope to increase this number a lot in 2022.



# FAMINE PREVENTION

- ▶ Only a matter of time before the next drought and consequent famine.
- ▶ Remember **80%** of the people of Malawi are subsistence farmers
- ▶ Currently shopping for 2 more containers to be used as grain storage facilities.
- ▶ Should cost about **\$3600** apiece

# MICRO-CREDIT BANK

- ▶ **2019:**
- ▶ **\$2200** donated to increase capitalization
- ▶ **670** individual farm families (representing **4690** people) have benefited from a loan of up to a maximum of **\$25**.
- ▶ Our payback rate is **98%**, and most loans are paid back within **3** months.
- ▶ This program has enabled countless impoverished children to attend secondary school, a heretofore unattainable goal.



# COVID RELIEF FOR LOAN RECIPIENTS

- ▶ In 2021 we gave \$530USD to help the loan recipients whose businesses had been severely adversely affected by COVID











# LAND LEASE

- ▶ Poor farmers are given about **\$9/ month** over **12 months** plus another **\$10** worth of seed and farm tools
- ▶ In return they are asked to grow high protein/nutrition crops instead of maize and tobacco
- ▶ And to practice conservation agriculture techniques (mulching for example)



# LAND LEASE

- ▶ **2021: 45** farmers (about **315** people)
- ▶ Estimate over **1075** farm families (**7525** people) helped since program began.
- ▶ Over **80%** of beneficiaries have been able to purchase their own land
- ▶ **94%** have graduated from the program because they no longer need assistance







# Seed packet donations



# LAND LEASE

- ▶ Peter says one farmer got 9 watermelons off a single plant, averaging 12-17 kgs per melon(26-37.4 lbs).
- ▶ He says that no one else is growing watermelons in the Kasungu East District besides our beneficiaries, but there is a great market and farmers can sell these for about \$3-\$4 apiece.
- ▶ This is just one crop and one example of how we're helping these poorest of the poor farmers.



# Watermelon from US seed



# OTHER ONGOING PROGRAMS

Free Care Fund to help defray medical expenses (**\$60/quarter**)

Medication Donation (**\$500/quarter**)

Medical Supply Donation: (**over \$8000 in 2020**)

IT teaching,

Also continuing and making wonderful progress



# LAPTOP/SOLAR POWERING SCHOOL PROJECT

- ▶ As of Oct 2021:
- ▶ 8 secondary schools solar powered and original 7 upgraded with more panels and better batteries
- ▶ 1 primary school now solar powered. The children in that school are now studying at night in the lit school for the first time ever
- ▶ There are now interschool computer related competitions at our laptop provided secondary schools
- ▶ Providing more laptops one of our highest priorities







# MEDICAL SUPPLY DONATION













# Chambwavi Girls' Dorm

- ▶ Between 2019-2020 we built a new girls' dorm for the Chambwavi HS
- ▶ Houses **90** girls who now don't have to walk for miles to and from school but can stay on site.
- ▶ Provides a lot more study time as a consequence
- ▶ Much of the structure was built by our medical mission team





# Chambwavi Girl's Dorm/Hostel













# COWS AND PLOUGHS

- ▶ **Since we started in 2016:**
- ▶ Our initially purchased herd of **24** cows has now increased to **52**. These cows and plows are shared amongst the farmers of **5** different villages, benefiting thousands of people.
- ▶ Beneficiary farmers can now plow **5** acres in a **day** when it once took them **5-6 weeks** to cultivate this much land by hand with a hoe.

# COWS AND PLOUGHS

- ▶ We provided **5** Magoye Rippers (conservation agriculture plows that plow a straight line rather than a wide furrow, thus preserving topsoil health) and the farmers using them have noticed a significant improvement in crop production..



# COWS AND PLOUGHS

► 2021:

► Plan to donate 4 more Magoye Rippers



## COWS AND PLOUGHS



**2 weeks in April. Based in Mtunthama, Malawi. Different team members work/teach either at St. Andrews Hospital, Kasungu District Hospital, K2TASO HIV Clinic, or as part of a mobile/rural outreach clinic team. Everyone rotates to have all experiences**



# Medical Mission Trip

- ▶ Over **80** high school students have participated to date
- ▶ Another **18** were supposed to go in **2020** but didn't.
- ▶ Next trip planned for April 2022
- ▶ Trips include a wide variety of health care providers as well as an IT teacher, Chemical Engineer, and Dairy Farmer
- ▶ ,











# HYDROPONICS/AQUAPONICS





# Our New Hydroponic Demonstration System 2021





Now on 2<sup>nd</sup> crop of lettuce and spinach. A work in progress











# Essential Oils?

