Bridges to Malawi October 2022 Update



▶ Brian Lisse, MD

- Associate Clinical Professor of Emergency Medicine, Tufts University School of Medicine
- President and Founder, Bridges to Malawi

FIRST, THE BAD NEWS

► There is currently an ongoing CHOLERA OUTBREAK (one of the worst in recent years) in Malawi

- ▶ Began in March 2022
- ▶ 28/28 Districts
- ► 4223 cases as of Oct 9, 2022
- ▶ 117 deaths
- ► About 60 new cases a day

FAMINE

Began: end May late start/early finish to the rains

Worst in Southern Districts (not where we work) BUT:

currently 100,000 people in our catchment area limited food/will be out completely soon.

Crisis will last through May 2023 when harvesting can begin again

THE GOOD NEWS

Bridges to Malawi is working hard to mitigate both of these disasters

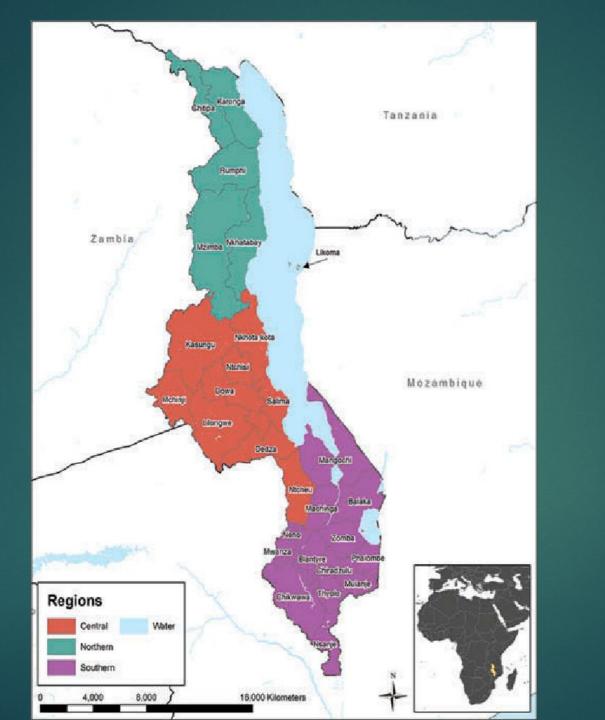
While continuing our development work as best we can.

This is a zero sum proposition, so, as always, we can certainly use your help

CHOLERA and BRIDGES TO MALAWI

- ► Although there's been a significant outbreak of cholera in the districts straddling the Kasungu District, where we work,
- ▶ (487 cases/17 deaths in Nkhotakota to the east
- > and 403 cases and 1 death in Mzimba to the north)
- ► To date there have been only 6 cases in our district and no deaths





CHLORINATION OF DRINKING WATER SOURCES

- ► We can't take complete credit for mitigation of this horrible killer in Kasungu,
- **BUT**
- ► Chlorinating the water for 583,000 people certainly makes a difference!

►In fact, there have been NO Cases where we have been chlorinating

► We began this program protecting 150,000 during the 6 months of the rainy season back in 2020.

► Because of the cholera outbreak, we started our chlorination efforts earlier than usual this year (in mid August) AND we increased the number of people we're protecting

Since the onset of the cholera epidemic we have spent \$3,000 to help chlorinate water

Prior to the epidemic, we were protecting 150,000 people.

► Now we are protecting 583,000

Cholera Protection Through Chlorination

► To continue to do this it will cost \$3000 more to get us through year's end AND

► Another \$5,000 to get us through the end of the rainy season in April (and therefore the risk of further cholera)

FAMINE MITIGATION AND BRIDGES TO MALAWI



Famine
Grain
Storage
Facility we built in 2017



Bridges to Malawi and Famine Mitigation

FAMINE 2022

- We've emptied Cindy's House and also spent over \$1750 since mid August to purchase and distribute protein fortified maize (corn) flour.
- ► This represents support of 603 households (approximately 4500 people)
- We have allocated an additional \$2250 from available funds

Famine Mitigation

Peter says we will need to help provide direct food assistance to 100,000 people until the end of May if possible

That's at least \$100,000

He is hoping to get half of that from us

FAMINE MITIGATION

► Going forward we'll be purchasing 2 shipping containers for more grain storage

Estimated about \$3,500 apiece

▶We'll do what we can

BRIDGES TO MALAWI PROGRAMS

- ▶1) Annual Medical Mission Trip
- ▶2) Annual Local High School Contest (winner joins trip for free)
- ▶3) Animal Pass-On Program (first goats, now chickens)
- ▶ 4) Diary Cooperative Project (introducing Holsteins and Freisians to the area; first born heifers passed on)
- ▶5) Cows and Ploughs (native Zebu cows and Magoye Rippers; also a pass-on program)
- ▶6) Irrigation, Well drilling, WELLO water wheel donation projects
- ▶7) Hydrononic/Aguanonic Project

BRIDGES TO MALAWI PROGRAMS

- ▶8) Micro-Credit Bank
- ▶9) Medical Supply/Ultrasound/EKG machine/Medication Donation
- ▶10) COVID Relief Program (included oxygen concentrator donation as well as education, outreach, and mask production)
- ▶11) Land Lease Program (Keeps poorest farmers on the land while encouraging them to grow more nutritious crops and use conservation agriculture practices)
- ▶12) Laptop Donation (filled with educational software)
- ▶13) Solar Powering Schools (initially high/middle schools AND now Elementary schools)
- ▶14) Direct Famine Relief/Famine Prevention

BRIDGES TO MALAWI

- ▶15) Beekeeping PROGRAMS
- ▶16) Essential Oils crop production
- ▶17) Malaria Prevention Projects (IRS at first, now Artemisia)
- ▶18) Reforestation/Bamboo Projects
- ▶19) Free Care Pool
- ▶20) Women's Empowerment Curriculum
- ▶21) Construction Projects (famine prevention storage facility, infrastructure for dairy project, animal pass on programs, honey processing, and a high school girls' dorm)
- ▶22) Water Chlorination Project (protecting 150,000 people from diarrheal illnesses like cholera
- ▶23) Mooncatcher Collaboration
- ▶23) Shake It So
- ▶24) Palma Soap Project



- ▶1) <u>Dairy Project Herd</u>: 74, including 9 at Kadsikizi
- Total number of beneficiaries:60

 Total number of calves born live: 28 (19 females/9 males)
- ▶ 40 pregnant by sex semen AI at present
- ▶ Production: Avg 13 Liters Milk per day
- ▶2) Cows and Ploughs: 54 Cows 7 Villages
- 1400 people benefit
- 5 Magoye Rippers and 10 traditional plows

- ▶3) Chicken Pass-On: 650 will be donated to 130 households benefiting about people 910 people by year's end
- ▶ 4) Goat Pass-On: 579 donated. Estimated 2,700 farm families benefited with over 15,000 goats

▶5) Malaria Rate Reduction from 36% to 2% (via Artemisia annua) Plants donated: Total 4200 (but increased by propagation cuttings) in 90 villages

- ▶6) <u>Laptops Donated</u>: 36 more donated in 2022 to 10 schools
- (2 are on the grid, so didn't need solar)
- Total: 111 laptops, averaging 10 per school.
- Over 1650 students have benefited
- ▶7) <u>Schools Solar Powered</u>: 9 Total (8 secondary and 1 primary)
- ▶8) <u>Land Lease Beneficiaries</u>: 45 currently, Total 640 families (approx. 4200 people)
- 80% have bought their own land
- 94% have graduated from the program since they no longer need assistance

- 9) MicroCredit Loan Beneficiaries: 2022: 375 loans:
- ▶218 paid back, 118 in process, 39 in arrears
- ▶Total since program began: 782 families (5474 people) avg loan \$25
- ▶Payback rate 95%

10) Water/Irrigation:

- **▶WELLO Waterwheels Donated: All 700**
- Collaboration with Moving Windmills (William Kamkwamba's nonprofit) to provide drip irrigation for 2 villages (about 1,000 people)
- ▶7 Boreholes with pumps drilled in 2022 by us

- ▶11) <u>Ultrasound devices</u> donated: 6 Total, including 4 Butterfly IQs
- ▶12) <u>Hydroponic Systems</u>: 1 demonstration project so far
- ▶Excellent crop production (lettuce, spinach, animal fodder)
- Experimenting with other crops. Near future plan: smaller systems/aquaponics
- ▶13) Reforestation Groves: Total trees planted since 2017: 330,000
- (not including 390,000 more planned for 2022)
- Total number of villages/groves: 130
- (minimum of 3900 people involved)

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14) <u>Bamboo Groves</u>: Total planted: 8800 (3800 from seed 2019 and 6,000 seedlings in 2020)
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Total number of village/groves:17

Propagation by cutting to start sometime in the next year

- 15) <u>Beekeeping</u>: 126 beneficiaries in at least 33 villages 12 kg yield per farmer harvesting every 3 months. 6th harvest ongoing
- Price: 5000MK (\$5) per KG:
- So farmers are averaging about \$60 per harvest
- Or \$240/year (per capita income \$550 Malawi 2022)

Dairy Project

- **▶** 74 Cows
- ► 34 Currently Milk Producing
- ► Avg 13 liters/day
- ▶ 40 pregnant (30% 1st time, 70% 2nd time)
- ► Individual farmers making yogurt for own consumption
- Fodder/water supply good
- Solar powered refrigerator we donated now at full capacity



Dairy Project



Milk Processing Equipment









Ernest and AlmaDeRuyterMemorialMilkingParlor



▶ Leon and Adeline **Kochman and** Allan, Morris, and Kitty Lisse Memorial **Kraal (Barn)**



Needs

► 30 more Holsteins at approximately \$485/cow (\$14,550)

► Infrastructure for milk processing machinery and milk chilling tank (construction underway, estimated finish Feb 2023) \$17, 510 needed in 2023

4 more solar powered portable refrigerators (about \$800 apiece: total \$3200)

MEDICAL MISSION TRIP APRIL 2022

- 6 High School Seniors
- ► All from Nashoba Regional HS students
- 1) Adelaide Ogden
- 2) Margot Sonia
- 3) Lela Boermeester
- 4) Matheus Alves
- 5) Heather Keane
- 6) Madeline Guthrie

Medical Mission Trip

- **▶**Biomedical Engineer:
 - **Jacob Hardy**
- ► Healthcare Providers:
- Brian Lisse, MD (Emergency Medicine/Internal Medicine)
- John Lozada, MD (Emergency Medicine)
- Don Hangen, MD (Orthopedic Surgeon)
- Megan Reyes Wangh, MD (Neonatologist)
- Karen Harvey-Wilkes, MD (Neonatologist)
- Kayla Monteiro, RN

- ►IT Specialist:
- Jennifer Hardy (high school teacher)
- Jonathan Slate (web designer and videographer)
- ▶ Pre-PA student:
- Alexandra Weaver
- **▶** Dairy Specialist:
- Dave Smith











- Mooncatcher Project
- Over 3,000 given away in last 2 years













We Take the Orphans to the Kamuzu Academy Pool for Easter





St.
Andrews
Hospital
Rounds







Home
Visit to
Cance r
Patient



Outreach Clinics Over 850 patients seen

Cows and Ploughs

- ▶ 54 Cows
- ▶ 5 Magoye Rippers
- ▶ 10 traditional ploughs
- ► Sex Semen AI from Holstein/Zebu cross
- ▶ 5 females/1 male (9 didn't take)
- ► The farmer with the young bull will not castrate it but use it for stud since the Zebu cows don't like AI

COWS AND PLOUGHS

- Cross breeding of Zebus with Holsteins
- ultimate plan: 100
- ytd: 15 crosses attempted using sex semen AI
- 6 healthy calves resulted from 6 pregnancies
- 5 females and 1 male
- other 9 didn't get pregnant

Peter says the Zebus don't take as well to AI, so will be breeding the old fashioned way, using the new male as Holstein sperm source

Cows and Ploughs 2023 NEEDS:

5 more Magoye Rippers (about \$125 apiece) Total: \$625

- ▶ 10 more Zebu cows (about \$350 apiece) Total: 3500
 - ► Grand Total: \$4125



ChickenPass-OnProject

CHICKEN PASS-ON PROGRAM

- Constructing solar powered brooder/incubator building
- 5 rooms
- ► To be finished by year's end (1 room will be used for honey processing)

We have 300 recently hatched chickens our laying stock for the future (so we don't have to buy any more eggs)

- Most of the future chickens will be given away to continue our pass-on program, but some eggs and chickens will be sold to make the program sustainable
- Chicken manure being used for our hydroponic system

School Laptop/Solar Power/IT Project



SCHOOL LAPTOP/SOLA R& IT

- We'll solar power at least 2 more primary schools in 2023 and donate laptops to these schools as well
- We also donated a copier machine which will help generate sustainability income for our IT projects
- Computer Clubs
- ▶ 3 person Malawian IT team including someone who can teach coding
- ► Hoping to recruit more Malawians with time

BEEKEEPIN G



BEEKEEPING NEEDS 2023

- ▶ 561 More farmers are on the waiting list
- ▶\$65 per farmer so need \$36,465 total

COVID

Decreasing currently in Malawi

► About 2 cases per day nationwide

Very few deaths



LAVENDER (ESSENTIAL OILS)

- We purchased an acre of land in 2022 as a demonstration project for the cultivation of lavender
- ► We're currently germinating about 1 pound's worth of lavender seed (cost \$159):
- ▶ 1) Hydroponic system
- 2) Outside in full sun
- **▶** 3) Outside in sheltered beds
- To see how best to grow it.
- ► If this works, the plan is to encourage farmers to replace their tobacco crops with lavender (will give them about 10 times as much money per KG) IF we can figure out the market
- ► NEED: Essential Oil making still (cost \$3200)

ZIKOMO KWAMBIRI

