

JULY - SEPTEMBER 2023

CAT Newsletter









Land O'Lakes Venture 37 leads the implementation of the CAT through a consortium of four leading agricultural development and academic institutions with funding from the Foundation for a Smoke-Free World (FSFW) through the Agricultural Transformation Initiative(ATI):

















10 QUICK FACTS ABOUT THE CAT_____

- A five-year grant launched in 2019, funded by the Foundation for a Smoke-Free World (FSFW) through its affiliate the Agricultural Transformation Initiative (ATI).
- A purposely designed inclusive science, technology, incubation and commercialization centre of excellence for smallholder farmers.
 - A consortium of four global leading agricultural development and academic institutions namely; Land O'Lakes Venture37, University of Minnesota, Stellenbosch University, Malawi University of Science and Technology (MUST), and Lilongwe University of Agriculture and Natural Resources (LUANAR) as a key partner.

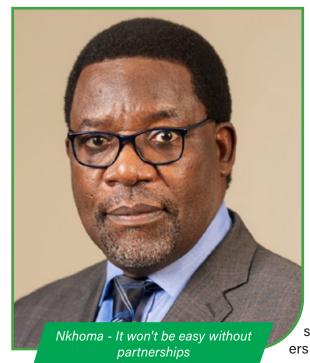


- The goal of the CAT is to transform Malawian agriculture systems and the lives of Malawian smallholder tobacco farmers by giving them access to inclusive innovation in agricultural science and technology through a range of commercialization channels. CAT initiatives focus on building the capacity of farmers around the significance of using improved crop varieties, as well as innovative technologies in plant nutrition, plant protection, soil enhancement and nutrition, irrigation, and ecosystem restoration amongst other aspects of diversification and transformation.
- CAT helps tobacco and smallholder farmers alike make economically viable, data-driven decisions for diversifying their livelihoods from tobacco dependence.
- Targets tobacco-reliant smallholder farmers to diversify to alternative value chains, increase production and productivity for sustained incomes.
- Provides a place for farmers to view and experiment with improved agricultural technologies, as well as co-create partnerships and develop agribusiness strategies. This includes technical assistance, mentorship, agribusiness development support, and access to a network of strategic partners who can support farmers move forward with agricultural diversification.
- Has three Smart Farms: two at LUANAR's Bunda and NRC campuses and another at Makoka Research Station in Zomba
- The CAT Building, which will be a centre of excellence for smallholder farmers, is currently under construction at LUANAR'S NRC campus opposite the CAT Smart Farm in Lilongwe. After completion of the CAT Building, smallholder farmers will, among other services, access soil testing and food testing laboratories to ensure their products meet market standards.





WORD FROM THE EXECUTIVE DIRECTOR



Dear Reader.

I'm thrilled to inform you that this year, the Centre for Agricultural Transformation (CAT) has received two awards, at both local and international levels. The first local award came in August 2023 at the National Agriculture Fair where CAT was recognized as the 'Best Service Provider among the exhibitors'. Then in September 2023, the International Tobacco Reporter Magazine recognized CAT with a 'Golden Leaf Award'- for its contribution towards diversification of the Malawi economy among smallholder farmers. This is welcome news to us, as CAT, the general smallholder farming community and our partners. To us, this is testimony enough that our work to support tobacco smallholder farmers' diversification, increase their production, productivity and incomes is bearing fruits and being recognized. On that score, I would like to thank the CAT team, our implementing partners, funding partner - Foundation for a Smoke-Free World (FSFW) through their affiliate the Agricultural Transformation Initiative (ATI), consortium and strategic partners, government counterparts and all stakeholders for supporting the CAT to win these two accolades. However,

although this is sweet news, it gives us a much bigger challenge to maintain the standards and do better moving forward. This won't be easy without partnerships.

Furthermore, we welcome the partnership with Standard Bank and Synergy Labs through a six-week Phuka Incubation program which was launched in September 2023. This agriculture-focused incubation program aims to empower 70 young agribusiness entrepreneurs with the necessary business skills and knowledge to excel in the economy as they work with and impact smallholder farmers directly with their various initiatives in a number of value chains. As CAT, we believe the entrepreneurial skills and knowledge gained in this program will empower the incubates to better transform lives of smallholder farmers in search for solutions to addressing myriad challenges they encounter.

As we move into the fourth quarter of the year 2023, we have been challenged to raise the bar by reaching more smallholder farmers through a range of impactful agricultural innovations and technologies. However, this task, as you all know, cannot be achieved individually or by working in silos. We will, therefore, need to rely on partnerships to achieve everything we have planned.

We, at CAT, are optimistic that together we can make a difference in transforming lives of smallholder farmers by leveraging on our strong partnerships. We, therefore, look forward to more fruitful and deepened engagement as we continue to support smallholder tobacco farmers' diversification agenda.

Wishing you all the best and enjoy the read!

Macleod Nkhoma
EXECUTIVE DIRECTOR





CAT RECOGNIZED FOR HELPING MALAWI DIVERSIFY ITS ECONOMY AMONG SMALLHOLDER FARMERS _____



The Centre for Agricultural Transformation (CAT) has received this year's global Golden Leaf Award for its efforts to transform the Malawi economy through promotion of crop diversification among smallholder tobacco farmers. The award has been given by the Tobacco Reporter magazine which honors outstanding individuals, companies and organizations associated with tobacco harm reduction (THR) initiatives. The award ceremony took place on 20th September 2023 in Seoul, South Korea.

Reacting to the development, CAT Executive Director, Macleod Nkhoma, attributed the award to various initiatives that the organization is implementing in supporting Malawian smallholder tobacco farmers to diversify their income streams.

"We have Smart Farms at Bunda College and Natural Resources College campuses of the Lilongwe University of Agriculture and Natural Resources (LUANAR) as well as at

Makoka Research Station in Zomba where we are demonstrating modern technologies to farmers so that they can adopt them and improve their [own] productivity. At the CAT, we are working towards ensuring that farmers are provided with necessary skills and technologies for them to contribute to the achievement of the Malawi 2063 vision," he said.

Nkhoma has since highlighted the need for collaboration among the civil society, public and private sectors in expanding smallholder farmers' reach to these smart farms.

The CAT is one of the six organizations, globally, that has received the Golden Leaf Award in recognition of its innovative approaches to promoting crop diversification and improving productivity among smallholder farmers.

According to a statement published on its website https://tobaccoreporter.com/.../01/and-the-winners-are-16/#, the magazine says its competition's judging panel selected six contestants globally, giving special consideration to entries that displayed commitment to innovation and/or sustainability.

It recognizes CAT for helping Malawi entrepreneurs boost production of alternative value chains such as bananas and button mushrooms, boosting the country's efforts to develop supplemental value chains and reduce its reliance on tobacco.





CAT SCOOPS BEST SERVICE PROVIDER AWARD AT THE ANNUAL 19TH MALAWI NATIONAL AGRICULTURE FAIR



Excitement was the prevalent mood on 24th September 2023 when the CAT received the Best Service Provider Award

Service Provider Award during the 19th Malawi National Agriculture Fair (NAF) in Blantyre.

The fair was organized by the Malawi Confederation of Chambers of Commerce and Industry (MCCCI) https://www.mccci.org/ in conjunction with the Ministry of Agriculture from 24-26 August 2023 under the

theme: "Achieving Self-Reliance through Agricultural Commercialization."

The aim of the NAF was to accord stakeholders in the agriculture sector an opportunity to showcase their value-added products, share experiences and lessons, strike business deals with potential investors and trad-

ers, establish thriving networks and forge long-term relationships.

The CAT received the above award based on external and internal appearance of the pavilion, presentation of the products/services, marketing techniques being used, uniqueness of the product/service, and

management of the stand/pavilion.

After receiving the award from the Malawi Minister of Agriculture, Honorable Sam Kawale, M.P., CAT Executive Director Macleod Nkhoma thanked the organizers for the recognition, describing it as a huge motivation for the CAT to step up efforts in reaching more smallholder tobacco farmers with support on crop diversification.



"This is a big honor to us and a morale booster. I would like to thank our partners who have come with us here to showcase at this fair. They have played a pivotal role in this award. I also want to recognize our funding partner – the Foundation for a Smoke-Free World through their affiliate the Agricultural Transformation Initiative – for providing resources that made it possible for us to exhibit at this event. We look forward to next year when we will do more and better," noted Nkhoma.



Apart from the CAT, other categories and winners included the Best Farmer Club/Cooperative award which went to Kirk Agribusiness (Under MWASIP), Best Input Supplier category grabbed by MECHRO Limited and Lilongwe Dairy (2005) which scooped the Best Agro Processor award.





MAKING SENSE OF AGRICULTURE FROM MINNESOTA TO MALAWI



Since early 2020, GEMS Sensing has partnered with the Centre for Agricultural Transformation (CAT) in Malawi to pilot the local deployment of GEMS research-grade weather stations and its associated data visualization and sharing tool. Piloting a network of weather stations across Malawi involves much more than working through the logistics of manufacturing, delivering and deploying the necessary hardware and software. It also involves identifying partners willing to trial the weather stations on their research stations and production farms and training local CAT and partners personnel to enable the deployment, particularly in remote rural areas with uncertain cellular connectivity. Working through the CAT provides a unique opportunity to engage with partners in private and public agribusiness throughout Malawi to test GEMS Sensing technologies in a low-income, smallholder farmer, tropical environment.

Over the past five years, the GEMS Sensing team has used feedback from our field partners to develop ever-improving scientific-grade, plug-and-play sensing devices coupled with a secure web-based informatics service. Weather stations aren't new in Malawi and the agriculture space, but GEMS Sensing has created a highly customizable system that is built specifically for the varied sensing needs of smallholder/farmers, researchers and their collaborators. The system's core logger box can be used for scientists with vastly different sensing requirements, from a full-stack meteorological station supporting a host of on-station or in-field crop performance studies to more specialized applications aimed at monitoring the below ground conditions that affect plant growth and health. The system's configurable and easy-to-use dashboard enables the integration, exploration, and sharing of real-time sensor data from multiple, perhaps distant, sites through a single portal.

Tracking the real-time, micro-level weather and edaphic patterns impacting agricultural production is crucial for a whole host of reasons, including advancements in breeding, agronomy, and extension efforts and the livelihoods of the farmers responsible for this production. These types of data are used for modeling weather events over large areas (e.g., rainfall and temperature) or informing management decisions like when and how much to irrigate a specific crop in a specific location. However, being able to collect, store, clean, explore, share, and analyze this data from multiple sites, isn't always straightforward. With this motivation to support smallholder farmers to make data-driven farming decisions in mind, the team has coupled world-class engineering design and build expertise with first-rate agricultural science smarts to realize a robust, extensible sensing system for agri-food research anywhere in the world.







GEMS Sensing in sub-Saharan Africa

For the Malawi pilot project, CAT and GEMS worked with a South African-based manufacturer to produce the GEMS Sensing stations. The full-stack weather stations are configured to collect eight parameters every 15 minutes: air temperature, humidity, barometric pressure, rainfall, soil moisture, soil temperature, wind speed, and solar radiation. Data is transmitted via cellular network to a cloud-based database managed by University of Minnesota, processed for quality, and made accessible to partners via a user-friendly, web-based portal.

The primary objectives of the pilot exercise were to better understand the

- 1. Tropical environmental impacts on the sensing hardware and software;
- 2. Total cost of ownership from a user perspective (i.e., costs of acquisition, installation, and maintenance) involved in deploying digital ag weather sensors in a low-income context with limited infrastructure support; and
- 3. Malawian agribusiness' demand, willingness to pay and potential use cases for networked weather stations (or related real-time sensing needs).

To date, the CAT team has deployed nearly 40 solar-powered weather stations across the spatially and temporally variable agro-ecologies that affect agricultural outcomes throughout the country. The stations continue to stream real-time data from experimental research stations, commercial farms, and smallholder farms. The pilot project is set to wrap-up in December 2023, though the CAT may continue to operate some of the weather stations beyond that time.

To get original and full article, visit: https://gems.umn.edu/news/making-sense-agriculture-minneso-ta-malawi





STANDARD BANK, CAT AND SYNERGY LABS LAUNCH PHUKA AGRICULTURE INCUBATION PROGRAM TO EMPOWER YOUNG ENTREPRENEURS WITH SKILLS TO BETTER SUPPORT SMALLHOLDER FARMERS



Standard Bank Malawi Plc, Centre for Agricultural Transformation (CAT) and Synergy Labs have jointly launched a six-week Phuka incubation program focusing on agriculture value chain creation and tailored at equipping incubates with knowledge to better support smallholder farmers in Malawi. The launch took place on 15th September 2023 at Synergy Labs in Lilongwe.

In the partnership, the program plans to enroll 70 entrepreneurs for six weeks who will gain knowledge and skills on how to promote smallholder farmers' diversification, increased



productivity and incomes agenda. The cohort will culminate into a Phuka Pitch Night #AgricEdition where the successful pitcher will win K10 million prize money to use as capital in their venture.

Head of Business and Commercial Banking Graham Chipande said the second cohort will be conducted in partnership with





the Centre for Agriculture Transformation (CAT) and Synergy Labs. Chipande said the bank's incubation program aims at empowering small and medium enterprise and equipping them with skills and knowledge to propel their business to greater heights.

"Standard Bank is committed to transform the economic landscape through sectors that contribute to the development of the country. We believe that together we can create a brighter and sustainable future for the agricultural industry. We will continue to be a key driver of Agribusiness value chain in Malawi to enable efficiency of every player in the sector. It is our hope that the innovation around our Phuka Incubator Hub will benefit the industry in the long run. Our call is for all the incubates to make full use of period to ensure sustainability and growth of their businesses," he said.

He said this year's incubates will be introduced to investors to help, gain industry experience, mentorship and receive valuable feedback from industry experts.

CAT Executive Director Macleod Nkhoma said incubates and other economic stakeholders need to borrow a leaf from the initiative of forging partnerships that aim to unleash the country's growth potential. He also called for a shift in mindset by entrepreneurs towards embracing partnerships and profit oriented Joint Ventures. "Experience shows that most small businesses in Malawi fail to progress because of individualism. Often Small and Medium Enterprises (SMEs) do not want to venture in business partnerships, which is bad for progress. This is why I implore upon businesses to consider partnerships because it gives room for more interventions that are successful and sustainable," he said.

Nkhoma further said the Malawi 2063 vision prioritizes agricultural productivity, diversification, and commercialization, which require partnerships to actualize. "Partnerships will be very crucial and extremely important to catalyze us to achieve this Malawi 2063 vision so that we become a country that is producing, earning forex and succeeding in all that we do," he said.

Nkhoma added that the Africa Continental Free Trade Area (ACFTA) will open huge market opportunities. For Malawi, being an agro-based economy, there are several opportunities for entrepreneurs to seize.







Final year undergraduate students at the Lilongwe University of Agriculture and National Resources (LUANAR) have impressed stakeholders on preliminary research on demand (RoD) results focusing on production challenges Malawian smallholder tobacco farmer's encounter.

CAT and LUANAR signed a \$13,500 research agreement to support six undergraduate students (four males and two females) conduct the research on demand.

LUANAR and CAT officials as well as industry players expressed satisfaction with preliminary progress made by the students towards their research on demand activities on Wednesday

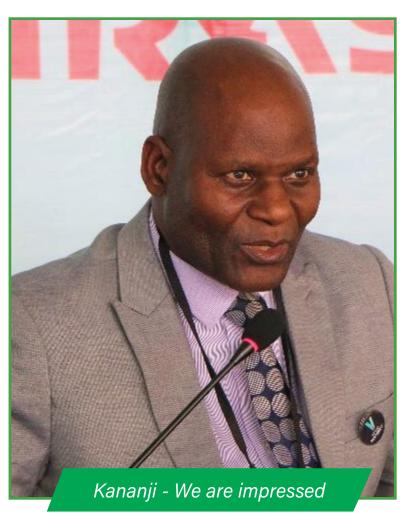
6th September 2023 at LUANAR's Bunda College campus in Lilongwe during a meeting of stakeholders aimed to receive progress of the students' research work. The research is being conducted at the CAT-Bunda Smart Farm and other locations of CAT partners' premises within Lilongwe. Acting Deputy Director for LUANAR-Bunda College campus, Dr. Joseph Dzanja, while applauding the partnership between LUANAR and CAT under the \$13,500 research agreement, said preliminary results showed that the students had done a good job in getting to the bottom of the challenges small-holder farmers are facing as they take on diversification and alternative value chains.

"This is an important initiative because the output of this research is what will feed into addressing the production









challenges farmers face. The good thing is that the research problems the students are interrogating are coming from the farmers themselves," he said.

The one-year research on demand initiative, which is being coordinated by Dr. Abel Sefasi of LUANAR, is focusing on selected value chains such as bananas, chia seeds, mushroom (waste), groundnuts, garlic and soybeans.

CAT's Director of Science, Technology and Innovation, Dr. Geoffrey Kananji, said the students had shown to be skillful and knowledgeable in finding solutions to challenges smallholder farmers' encounter.

"As CAT, we are extremely impressed with the progress so far because what the students are doing is aligned with what they were requested to do. By

the end of this year, we expect these students to propose solutions to production challenges," he said,

On his part as an industry player, Global Seeds Limited Managing Director, Shane Phiri, expressed his satisfaction at the quality and relevance of the research being conducted by the students.

"We are very impressed with what the students are doing because the issues which are being looked into are responding well to our industry needs and the quality of research is good. These are the issues we, as an industry, petitioned CAT and LUANAR to look into," said Phiri.

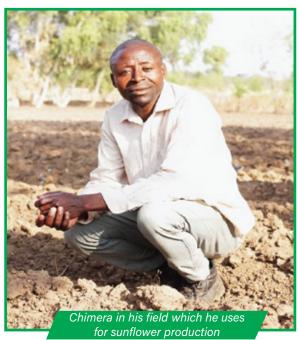
Sarah Chinula, who is one of the six research students and whose research work is focusing on Chia Seeds, said she looked forward to finding solutions to specific challenges faced by smallholder farmers and applicated the sponsorship support from CAT which has eased her work.





SMALLHOLDER FARMER REAPS BENEFITS IN SUNFLOWER PRODUCTION AFTER DIVERSIFYING HIS CROP PRODUCTION

"Going Green Ltd, through support from CAT, provides us with farm input loans and buys the produce from us at a good price and payments are also done on time which is a huge relief in terms of market stability" – Chisale, a smallholder farmer



For many years, smallholder farmers in Mchinji district have relied on tobacco and groundnuts production for commercial purposes. However, over-reliance on these two crops has affected farmers' livelihoods. Availability of ready markets for produce is also a big challenge in Malawi due to limited private sector investment in agribusiness.

Currently, fluctuating prices for tobacco and high aflatoxin levels in groundnuts has affected market access and income for the farmers. As a result, smallholder farmers have resorted to diversifying their crop production to alternatives like the sunflower value chain.

Steven Chimera, from Kabuthu Village in Traditional Authority Mavwere in Mchinji district, is one of the smallholder farmers who has diversified to sunflower production. Before starting sunflower production, he cultivated tobacco, groundnuts and soya beans although profits realized were not substantial and not meeting his household needs.

Chimera said; "My initial focus was only on growing tobacco and groundnuts just like most farmers in my area. However, finding markets for these crops was a challenge and I ended up selling my farm produce to vendors at lower prices, thus the profits realized were little compared to my investments and labor," he said.

Chimera started sunflower farming after he attended one of the community awareness meetings which Going Green Limited organized in his village. He begun cultivating this crop on an acre land in 2021 -2022 season and in the 2022-2023 season Chimera cultivated on three-acre land.

"Cultivating sunflower for commercial purpose has helped me realize profits despite growing it on a smaller piece of land. I am now able to support my family with all the basic needs which was not possible in previous years. I am now geared to extend the farm size from one acre to over three acres to make more profits," he stated.

"The other good thing is that Going Green, through support from CAT, provides us with farm input loans and later buys the produce from us at a good price and payments are also done on time which is a huge relief in

terms of market stability. Furthermore, the organization frequently conducts trainings with us as well as farmer field visits to ensure that we are always on track", said Mr. Chimera.

Chikondi Khonje, Managing Director for Going Green, said her organization is geared to fully support smallholder farmers and scale up sunflower farming to many farmers in Mchinji.

She added that her organization intends to extend sunflower production to other districts in Malawi beyond the CAT project as part of the company's sustainability plan. "Going Green Limited envisions that smallholder

farmers, especially women become financially independent by enhancing agri-business through provision of quality extension services, capacity building and better stable markets," explained Khonje.

Going Green Limited engages smallholder farmers through contract farming by providing them with input loans, trainings and buying their

sunflower produce as an off-taker. With support from the Centre for Agricultural Transformation (CAT), over 1,300 farmers have adopted sunflower farming as their main commercial crop in Mchinji.







KNOW ABOUT THE CAT ADVISORY COMMITTEE MEMBERS



1. Dr. Albert Gideon Changaya Chairperson and Executive Director of Agricultural Research and Extension Trust (ARET)



2. Dr. Candida Nakhumwa Vice President and Country Director: Foundation for a Smoke-Free World and Agricultural Transformation Initiative (ATI), Malawi



3. Rizvaan Khan
Manager, Agriculture and
Economic Programs: Foundation
for a Smoke-Free World and
Agricultural Transformation
Initiative (ATI), Malawi



4. Dr. Agnes Mwangwela Deputy Vice Chancellor, Lilongwe University of Agriculture and Natural Resource



5. Professor Address Mauakowa Malata Vice Chancellor, Malawi University of Science and Technology, Malawi



6. Professor Philip G. Pardey Professor of Science and Technology Policy, University of Minnesota, USA



7. Professor Danie Brink Dean of the Faculty of Agri-Sciences, Stellenbosch University, South Africa



8. John Ellenberger Executive Director, Land O'Lakes Venture37



9. Dr. Elizabeth Sibale Former Deputy Chief of Party: Palladium - Feed the Future - AgDiv Program



10. Manzoor Bheda Chairman: Kakuyu Investments Limited



11. Jacob Nyirongo Chief Executive Officer, Farmers Union of Malawi (FUM)



12. Chancellor Kaferapanjira Chief Executive Officer: Malawi Confederation of Chambers of Commerce and Industry (MCCCI)



11. Dr. Kwanele Ngwenya Chief Executive Officer, NBS Bank



12. Dr. Rachel Sibande Founder and Director: M-Hub / ICT incubation, Malawi





GENERAL Q & A ON CAT

WHERE IS THE CAT LOCATED?

The Centre for Agricultural Transformation is headquartered in Lilongwe, Malawi and plans for its construction are currently underway at the CAT Centre of Excellence in Lilongwe. In the meanwhile, the CAT is operating through its Smart Farms which are located at Lilongwe University of Agriculture and Natural Resources (LUANAR) main campuses of Bunda and NRC as well as at Makoka Research Station in Zomba. It is also operating through agribusinesses spread across the country.

HOW LONG IS THE CAT PROJECT FUNDED?

The current phase of the CAT project is funded for five years (2019-2024).

HOW ARE THE FOUNDATION FOR A SMOKE-FREE WORLD, THE AGRICULTURAL TRANSFORMATION INITIATIVE (ATI) AND THE CAT RELATED?

The Foundation for a Smoke-Free World is an independent US-based non-profit organization with the purpose of improving global health by ending smoking in this generation. The Agricultural Transformation Initiative, a core pillar of the work of the foundation is focused on preparing farmers for a future of reduced tobacco demand by working with smallholder farmers to facilitate the development of complementary structured value chains. The goal is to make the agriculture sector in Malawi and the Southern Africa region competitive. The Foundation through ATI, provides financial support to implement programs to achieve these objectives.

