

# The Agricultural **EDUCATION** MAGAZINE

*January/February 2022*  
*Volume 94, Issue 4*



## Going Global

# Gaea Goes Global

by Gaea Hock

I love to travel!

I fell in love with international travel immediately after high school graduation when I participated in a study abroad trip. We visited seven European countries in two weeks. I remember seeing historical buildings, trying new foods, and learning to navigate in a new environment. This experience helped broaden my view of the world as I started college.

My next international experience came while I was a high school agriculture teacher. I spent five weeks living in Prague, Czech Republic as part of a Fulbright-Hays Seminars Abroad program in summer 2005. This experience was key in furthering my interest in international topics and travel.

After that experience, I purposefully sought out additional international opportunities. I traveled to Japan as part of the Toyota International Teacher Program in 2007 and to Poland on another Fulbright experience in summer 2009. These three international opportunities established a firm foundation for my desire to grow as a global citizen and educator.

While in graduate school I participated in a study abroad experience to Costa Rica. I learned about tropical agri-

culture and vividly remember eating pineapple fresh from the field. That trip allowed me to observe best practices for leading an international experience.

When I interviewed for my current position one of my goals was to offer a study abroad experience for agricultural education students. I knew where I wanted to take them due to my wonderful experience in the Czech Republic back in 2005. Luckily, I talked my colleague and friend, Dr. Jeremy Falk, from the University of Idaho to be my travel buddy for this adventure. In 2018, we co-led a group of students through the Czech Republic and it currently sits as my all-time favorite international experience.

Looking back, I am so thankful we moved quickly to make the trip happen. We worked hard to plan, advertise, recruit, organize, and design a high impact learning experience. I worked with Alex Thor, Explorations by Thor, to make sure the experience included agriculture, agricultural education, and cultural components. The itinerary allowed us to deepen our awareness, appreciation, and knowledge of those areas on a global scale.

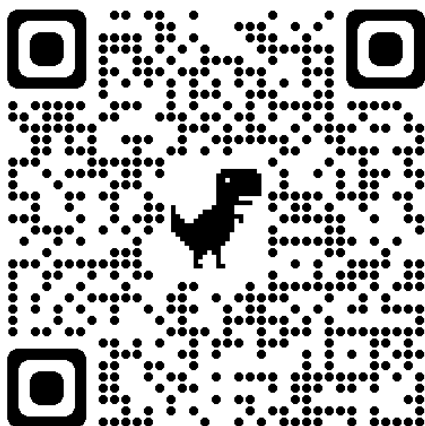
Although the trip was almost four years ago, I still vividly remember how excited the stu-

dents were during certain points of the trip. Listening to them talk about what they learned and how the experience impacted them made all our efforts worthwhile.

One of my favorite travel quotes sums up the experience:

Once you have traveled, the voyage never ends, but is played out over and over again in the quietest chambers. The mind can never break off from the journey.  
- Pat Conroy

As we continue to navigate a world with limited international experiences due to the pandemic, we must embrace new ways of connecting on a global scale. The articles contained in this issue offer opportunities and methods to help our students grow and develop as citizens of the world. I hope you learn new ways to Go Global!



You can read about our experience on our blog: *Experiencing Agriculture Abroad*



Dr. Gaea Hock is an Associate Professor of Agricultural Education at Kansas State University and Editor of The Agricultural Education Magazine.



# Going Global

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## Distribution

Beginning with Volume 93, Issue 1, (July/August 2020), *The Agricultural Education Magazine* will be available in electronic format only, free to all, accessed through the website of the National Association of Agricultural Educators at <http://www.naee.org/profdevelopment/magazine>. All available back issues of the magazines are archived at this web address, also free to all.

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## Article Submission

Articles and photographs should be submitted to the Editor or Theme Editor. They will acknowledge their submission. Items to be considered for publication should be submitted at least 90 days prior to the publication date of the intended issue. No items are returned unless accompanied by a written request. Articles should be approximately 1500 words. Information about the author(s) should be included at the end of the article. Photos and/or drawings appropriate for the “theme issue” are welcomed and should be submitted as separate files (jpg or tiff format preferred – minimum 300 dpi). A recent photograph (jpg or tiff format preferred– minimum 300 dpi) of all authors should accompany the article. Articles in the Magazine may be reproduced without permission but should be acknowledged.

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## Publication Information

*The Agricultural Education Magazine* (ISSN 0732-4677), published bi-monthly, is the professional journal of agricultural education. The journal is published by The Agricultural Education Magazine, Inc. at 2525 Harrodsburg Road, Suite 200, Lexington, Kentucky 40504-3358.

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Front Cover Photo Courtesy of Lauren Seeley  
Back Cover Photos Courtesy of Mary Michael Lipford



# Universally United through Ambitions for Agricultural Education

by Jessica R. Spence

**A**lmost a year ago I wrote an article for this magazine and began it with the words, “we all know the feeling – it’s March 2020 and everything is cancelled.” Well, it’s 2022 – and I think we all can unite by feeling exhausted, but somehow used to, our global situation. Although this pandemic has kept us from travelling and engaging globally as was once “normal” in 2019 and prior, it has been hopeful and enlightening to see the ways we persevere in connecting worldwide.

This past year I gained the privilege of being the program coordinator for the International Agricultural Education Fellowship Program, where I oversee nine talented individuals who work as implementers of the School-Based Agriculture Education Model, and 4-H in rural Ghanaian communities. As I write this, our program is challenged by the threat of a new COVID-19 variant that has, yet again, rocked global travel. Still, the fellows persevere and continue their work because there is something larger at stake, and that is providing opportunities for agricultural education to their engaged and dedicated students.

In the U.S., I know Agricultural Science teachers are facing many challenges. However, the larger goal of providing for our students perseveres. It unites us all. Those who comprise the readership of this publication all have one thing in common: a passion for continued improvement of agricultural education. The means of that improvement may take many forms from the perspective of every individual. For me, that perspective takes root in the need



to think on a global scale. Whether it is providing opportunities for hardworking students in Ghana, or creating globally-competent leaders across America, a global perspective from agriculture educators is vital.

The past two years have not lacked unique challenges. It seems as though just as we begin to get our bearings or improve, new issues arise. However, with those issues come solutions. I am proud of, and inspired by, the innovative thoughts and actions of educators to pursue globally-gearred efforts in the classroom whilst mitigating our reality. From exchanges, virtual adaptations, technological innovations, emerging theoretical developments, and innovative problem-solving – the advancements in agricultural science education remain unhindered on a grand scale. I truly believe that is due to the passion of dedicated educators, and their unrelenting will to provide relevant opportunities for their students.

With an end-in-sight far from being clear, it is important to continue this momentum and keep ‘going global’ for our students and students across the world.



Jessica R. Spence is the Program Coordinator for the International Agricultural Education Fellowship Program, operating in Ghana, of the Borlaug Institute at Texas A&M University.



# Using Technology to Foster Global Competence

by Dr. OP McCubbins

The world around us is rapidly changing. Our local communities, our economies, our classrooms... These spaces are all becoming increasingly influenced by a globally competitive workforce. How can we, as agricultural science teachers, ensure our students develop the global competencies necessary for contributing and competing in this global workforce?

What does it mean for a student to be globally competent? According to Mansilla and Jackson (2011), globally competent students have a firm grasp on the following competencies:

1. Investigate the world beyond their immediate environment.
2. Recognize their own, and others' perspectives.
3. Communicate ideas effectively with diverse audiences.
4. Take action to improve conditions.

For each competency, I will outline one or two tech tools you can use to initiate the process of having your students develop these competencies.

## Investigating the World

As you work to have your students investigate the world around them, they should be challenged to explore issues of global significance. As they embark on this journey, it can be useful to explore the areas these issues exist. How do you get a student exploring the impact of irrigation on cropland across the world to see the actual impacts irrigation has in Saudi Arabia? This is where technology shines. In particular, virtual tour platforms and Google Earth.

## FarmVR

My good friends at Think Digital in Australia are transforming the way students learn about where their food comes from. Does pork production look different from your state compared to Australia? Does dairy production vary that much from your state to the land down under? If you aren't sure of those answers, let the team at Think Digital and their FarmVR platform help. Your students can explore these differences via web-based virtual reality experiences or a smartphone application.

- FarmVR Web Experiences:  
<https://app.farmvr.com/experiences>

## Guided Tours - 360schools



Virtual tours are an easy way to get your students to investigate the world. 360schools is a relatively new platform that makes it easy for teachers to build interactive, immersive learning experiences for students. Scan the QR code (or use this short link: [bit.ly/AgEd360Schools](https://bit.ly/AgEd360Schools)) to check out a sample tour I made for this article. My sample tour has a cover slide, a text slide with information, a pre-test quiz slide, a panorama with a hotspot con-

taining instructions, two panoramas with a video, and a post-test quiz slide. The platform is intuitive and sharing your creations with students is simple. The how-to guide ([schools.360cities.net/teachers-guide/coral-reef.pdf](https://schools.360cities.net/teachers-guide/coral-reef.pdf)) is a great resource to help you get started and includes another sample tour. Think about how excited your students would be as they explore other parts of the world! The platform is still in its infancy, but is quickly becoming one of my favorites. As it continues to evolve and students gain the ability to create their own tours, think about the transformational potential of empowering your students to become creators of virtual tours to share with a public audience.

## Google Earth Engine



Google Earth Engine is a powerful tool for geospatial analysis. Scan the QR code to see a timelapse of the impact irrigation has had in Saudi Arabia. This platform is used by scientists worldwide to monitor change and project trends. With 37 years of satellite imagery, you and your students can explore how the world changed with the advent of various agricultural advancements. The platform contains

Dr. OP McCubbins  
present the  
AggieXR  
technology.



many ready-to-use datasets for you and your students to dive right in. A few datasets that seem particularly ripe for exploration in an Agricultural Education program include:

- Climate Change: <https://developers.google.com/earth-engine/datasets/tags/climate>
- Cropland: <https://developers.google.com/earth-engine/datasets/tags/cropland>
- Land Cover: <https://developers.google.com/earth-engine/datasets/tags/landcover>

### Recognizing Others' Perspectives

As your students work to become globally competent, they will need to understand and articulate their own perspectives, and those of others. There are many great ways to expand your students' world view, but how can we leverage technology to help us eliminate time and place barriers? 360-degree videos can transport you to another place. This medium lets you interact and

experience the content compared to that of traditional video. It can make you feel present in a location you aren't physically present in. For that reason, it has the potential to let viewers experience what it is like to 'be' someone else. This embodied interaction can be powerful in recognizing others' perspectives.

#### YouTube VR

YouTube is an enormous repository for 360-degree videos that can be viewed on a computer, smartphone, or in a virtual reality headset. You can simply add '360' or 'VR' to your search terms on YouTube and find amazing content on global topics. Some great examples of 360-degree videos include:

- China, One Week Before Coronavirus Lockdown: <https://youtu.be/ow4qqYn474w>
- Lockdown Around the World: [https://youtu.be/zCbQffIER\\_E](https://youtu.be/zCbQffIER_E)

- Yawarani: A VR Film Made With Indigenous Creators: <https://youtu.be/FU6OwSjod3o>

### Communicating Ideas with Diverse Audiences

How do you have students report or present assignments in your classes? Is the audience limited to you as the instructor? Could others benefit from learning about the solutions your students developed as a component of a project or problem-based assignment? There are many ways to easily expand the audience your students are communicating with to be more authentic and diverse. I will highlight two of my favorite platforms for students to create public-facing products to share with audiences around the world.

#### Wakelet

Wakelet is a platform for finding, organizing, and sharing information. You could have students create digital portfolios to track

“...think about the transformational potential of empowering your students to become creators of virtual tours to share with a public audience.”

their learning as it relates to global issues. Students can develop a public newsletter that draws attention to various issues and how it impacts the local community. Students can collaboratively build these Wakelet collections to share with the world.

Effective communication is a concern as we begin expanding the audiences our students engage with. Language barriers are probably the biggest concern if your student population isn't bilingual. No need to fret, as Wakelet has an Immersive Reader built into it, which makes content accessible and inclusive. It easily performs translation that can help eliminate language barriers. The only limit to Wakelet is your (or your students) creativity. A few great collections created by Wakelet community members are linked below.

- Global Citizenship Education: <https://wke.lt/w/s/qZY6ds>
- Native American Heritage Month: <https://wke.lt/w/s/64JJm7>
- Prevent and Reduce Food Waste: <https://wke.lt/w/s/OA3Imv>

### Taking Action

How will you empower students to take action? Can a 360-degree video motivate a student to take personal or collaborative action to improve conditions? How will you challenge students to view themselves as active participants in an interconnected world? Can some of the tech tools I shared help you? I truly believe agriculture teachers are powerful change agents and

know you are doing great work in preparing students for an ever-changing world. As you explore the tools above, reach out if I can help you in any way.

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# Connecting the Local to the Global

by Dr. Melanie Miller-Foster

Often when we think about global problems, our minds tend to fly to far off places. We think of current events that we see on the news and think of distant crises such as famine, war, and environmental catastrophes.

At the same time, we know that our local communities suffer from many issues. Teachers are on the front lines when it comes to knowing what's going on in a local community whether it is poverty, food and housing insecurity, violence, inequalities, or crumbling infrastructure. You name it, teachers see and experience it firsthand.

It can be hard to bring together what seems to be two completely separate sets of problems – one faraway and abstract, and the other in our backyards and all too present in our everyday lives. It can seem like competing priorities as we try to figure out which real-life issues we should present to students when considering bringing authentic issues into classes and co-curricular activities.

There does not have to be such a dichotomy to our decision making. Focusing on the roots and characteristics of an issue make it easier to tie local issues to global issues.

Take the example of food insecurity, an issue that is often closely associated with agriculture.

According to the United Nations, the number of people experiencing food insecurity has been rising since 2014 and increased dramatically during the pandemic. Food insecurity isn't just about not having enough calories, it is about having a steady supply of safe and nutritious food.

Malnutrition can present itself in many different forms, whether it is stunting, wasting or obesity. Additionally, we can't just think about food security today, but we have to think about the innovations that are needed in order to sustainably increase agricultural production, decrease food waste, and improve the resilience of the global supply chain.

Food security is a global issue, but aren't there ways to analyze food security issues in the local community?

Utilizing resources from the USDA Economic Research Service and data from Feeding America, it is easy to find accessible data at national, state and county levels.

Examine related health issues by considering data such as prevalence of obesity and diabetes. Use the USDA Food Atlas to analyze the number of fast-food restaurants versus farmers' markets in a specific area.

Create a map of community resources that assist food insecure individuals and families.

Look to the local land grant university for innovations that are sustainably increasing agricultural yields.

Gather student opinions on how to decrease food waste in the school cafeteria.

How are these local issues of food insecurity related to the global issues of food insecurity? To tie local to global issues, it's important to focus on the characteristics of the issue. In the food security example, a great place to start is the definition of food insecurity.

Food security, as defined by the United Nations' Committee on World Food Security, means that all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and healthy life.





Focusing on the definition can be the entryway for comparing different food security situations in different contexts. An interesting way to do this is through the United Nations Sustainable Development Goals (SDGs). The SDGs were adopted by United Nations member states in 2015 and are essentially a strategic plan for the world. The 17 goals outline major global challenges and highlight the fact that many global challenges are interlinked.


Importantly, the SDGs are a guideline for all countries, not just developing countries. The idea is that all countries need to work together to solve global challenges, and often solutions start at home.


Sustainable Development Goal 2, Zero Hunger, is one of the goals related directly to agriculture. The overarching goal is to “End hunger, achieve food security and improved nutrition and promote sustainable agriculture.” The goal is made up of eight specific targets and is measured by a series of thirteen indicators.


High quality data on food insecurity can be difficult for students to find. One of the great things about the SDGs is that they have become the lingua franca of the world, with data and resources publicly available and easy to access.


 Progress toward Sustainable Development Goals can be compared and contrasted among states and countries through clickable dashboards. How does the U.S. progress compare to that of other countries? To other U.S. states? <https://dashboards.sdgindex.org/map>

 Comparing the situation of two countries, what is the rate of food insecurity among children? Who are other vulnerable populations? Does food insecurity tend to be more of an issue in urban or rural areas?


 Are there specific current or historical events that have influenced food security in a particular country or region? Influences could be economic, political, environmental, or social.

 How does food insecurity manifest itself in different contexts? In some countries obesity may be a larger issue, while stunting is an issue in others. Read *The First 1,000 Days* by Roger Thurow to compare and contrast four different countries.

 Read the latest edition of the *State of Food Security and Nutrition in the World*. Identify ways students can contribute to the recommendations outlined in the report. <https://www.fao.org/3/cb4474en/online/cb4474en.html#>


 How does it feel to learn about such a severe and important issue affecting all countries around the world? Write a poem to express your feelings.

The possibilities for SDG integration into the classroom are limitless! Of course, the most meaningful integrations are those that fit with the content, the interests of the students, and the local context. This is why we at the Global Teach Ag Network believe it is important to put the decision-making tools and relevant resources into the hands of teachers so that they can design custom learning opportunities for their students. Here are some ideas for getting started:

 Register for the Global Learning in Agriculture Con-

ference to join a community of like-minded educators: <https://globalteachagnetwork.psu.edu/glag/>

 Apply to go on a professional development journey with the World Food Prize Foundation Global Guides: <https://globalteachagnetwork.psu.edu/global-guides/>

 Pledge to #TeachSDGs and apply to be an ambassador: <http://www.teachsdgs.org/>

Imagine a world where teachers are empowered to connect students to the world's most pressing issues and nurture the innovation that will be required to solve them. We hope you become a part of our Global Teach Ag Network community and connect to like-minded educators across the country and the world.



*Dr. Melanie Miller Foster currently serves as Associate Teaching Professor of International Agriculture in the College of Agricultural Sciences at The Pennsylvania State University. She is the co-founder of the Global Teach Ag Network with the mission of empowering educators to address the world's most pressing issues.*

# YoFFA & TEFFA: The Duo Promoting Uganda's Agricultural Education

by Brian Kibirige & Nina Crutchfield

## Introduction to Uganda and Education

Uganda is a landlocked, eastern African nation who gained her independence from the British Colonial government on Oct 9, 1962. The current population is 34.6 million people and is considered one of the youngest nations in the world with 70% of the population under 25 years old (Uganda Bureau of Statistics, 2020).

In Uganda, agriculture accounts for 68% of employment, occupies half of the country's land area, and accounts for 50% of all exports and 25% of the gross domestic product (Lugolobi, 2021). According to the 2018 World Bank Group report "agriculture is considered the leading sector for future economic growth" (p. 8). Yet, it is not well funded. The 2021/22 Ugandan national budget, accounting for \$44.7 trillion UGX Shillings (approximately \$1.25 billion USD), allocated only 1.7 trillion (5.1%) for the agriculture sector (Lugolobi, 2021).

The disheartening situation is further exacerbated by the lack of practical, work-based, agricultural learning experiences employed by educators at all levels. In 2017, 8.8 million learners enrolled in primary education (Uganda Bureau of Statistics, 2020). Historically, by the end of the seventh year, 40% of the students have dropped out (Businge, 2010). There are a host of reasons for the high student attrition, including hidden school fees, culturally accepted child labor, peer pressure, and advancement exams (Kayongo et al., 2019). It is important for U.S. readers to understand, Uganda's advancement exams are truly high stakes testing

where students who do not score proficient are not allowed to continue their education.

The number of pupils attending classes past the age of 12-15 are further reduced by the Certificate of Education Exam. The final high school exit exam, Advanced Certificate of Education, is taken by less than 100,000 students, ages 18-21 (Kamugisha, 2017). This high dropout rate contributes to the 47% unemployed rate of people 15-30 years of age (Uganda Bureau of Statistics, 2020).

## Coalition of the Willing

The ongoing poor economic investment, high attrition rate of students, and extreme unemployment drove a group of like-minded educators, parents, and partners, referring to themselves as the "coalition of the willing," to conceive of a School Farm Camp. In 2014, their dream became a reality as Ugandan students and their teachers of agriculture arrived at Gayaza High School for their first taste of experiential learning at the school's farm. A local veterinarian led sessions on animal husbandry and pregnancy checking dairy cattle. It was the first time students were able to sleeve up. The school farm manager led sessions related to feeding and sanitation practices for raising swine, rabbits, and poultry. The Gayaza's teachers of agriculture led

sessions focused on proper propagation of banana trees, native plants, and intensive gardening practices. Since its inception, the annual Farm Camp has evolved to include teaching business strategies, marketing and creating value-added products, and helping academic teachers find ways to make their lessons come alive by using agriculture as the context for writing, math, and science.

After the initial Farm Camp, the coalition realized student engagement could be enhanced by implementing student-peer teaching strategies. The concept was fueled further after a member of the coalition, George Ntibarikure, visited the CRS Farmer to Farmer (F2F) headquarters in Baltimore. After describing the group's efforts to expand Farm Camp, infuse agriculture across academic instruction, and implement student-peer teaching, Bruce White, the F2F lead and former National FFA employee, knew a visit to a nearby agricultural education program was in order. Bruce knew observing students and FFA at the local level would be the best route to illustrate how systematic delivery of agricultural education and a youth organization can impact student success.

Upon returning to Uganda, George shared his experiences

Bruce knew observing students and FFA at the local level would be the best route to illustrate how systematic delivery of agricultural education and a youth organization can impact student success.





*The goal of Farm Camp is to equip the next generation of students with the skills and innovative practices to move the country away from subsistence production by creating entrepreneurs and agri-business men and women.*

with the coalition and the idea of creating the Young Farmers Club in primary and secondary schools emerged. George and Bruce worked to create the F2F program's first scope of work for a non-technical event, inviting two National FFA employees and a former State FFA Officer to Uganda. The 2016 scope of work included spending time observing the Gayaza educators' efforts to infuse agriculture into all aspects of the school's curriculum, share the U.S. model of agricultural education, provide student leadership workshops, and make recommendations for diffusion and adoption of Farm Camp practices and the Young Farmers Club in public and private schools across the country.

The coalition was just getting started with this initial visit. They sought funding from the F2F program a second time to take a delegation to the U.S. to observe American agricultural education and FFA in practice. In June of 2017, four members of the coalition boarded an airplane bound for Arkansas. Hosted by Bruce White and the same National FFA delegation, the group visited a variety of local programs representing urban and rural communities, large and small schools, multiple career pathways, and an assortment of Supervised Agricultural Experiences. When visiting with U.S. agricultural educators they sought instructional strategies,

SAE best practices and funding sources, and student leadership practices. The week's schedule also included observing the students as they participated in the Arkansas FFA Convention and engaging with National Association of Agricultural Educators representatives. The experience culminated with creating a strategic plan to guide the coalition's future efforts to grow agricultural education and their Young Farmers Clubs across Uganda.

### **Youth Future Farmers of Africa**

Since its initiation, the Young Farmers Club at Gayaza has renamed itself the Youth Future Farmers of Africa (YoFFA) and extended its reach to over 100 chapters in primary and secondary schools all over the country. The chapters target students with an interest in agriculture business and farming. Their focus is enhancing classroom instruction, utilizing school farms and gardens, developing members' leadership skills, and connecting with their communities through service projects. There is continued hope for growth as more schools initiate chapters, school learning labs grow, teachers use club activities to enhance student engagement, agriculture content is infused across all grade levels, and external funding sources are secured. YoFFA chapters are facilitated by a team

of educators which includes a school administrator, a core/academic instructor, and, when possible, a teacher of agriculture.

### **TEFFA**

One of the recommendations proposed by the 2016 National FFA delegation and included in the 2017 strategic plan was to create a professional organization for the teachers of agriculture. Having spent time with NAAE leadership exploring the strategies employed by the organization to meet member needs, its leadership structure, and recruitment efforts, the coalition formulated a strategy for creating community among their teachers of agriculture and creating professional development opportunities. In 2018, the F2F program funded a 3rd scope of work to return the U.S. partners to Uganda to facilitate the initial meeting and forming of the TEFFA, Teachers and Educators for Future Farmers of Africa. It should be noted that the word "teffa" in the Luganda language means "it will not die."

Today, TEFFA's elected teacher-leaders and executive board provide professional development events during the annual Gayaza Farm Camp and Saint Mary's College Agribusiness Camp (created in 2018 and site of TEFFA's formation). In the earliest stages of formation, teachers are already finding a sense of community when they come together. They

are staying connected after the events, supporting each other, and helping one another find and secure resources. They are also elevating the profession of teaching agriculture among their peers, students, parents, school leadership, and government officials. During the 2020, TEFFA was even able to deliver professional development at a distance, with the help of Field of Hope, an NGO partner, bringing in producers and educators from around the world.

### Partners in Uganda's Agriculture

In the bid to grow agricultural education and experiential learning in Uganda, a number of public and private organizations, departments, ministries and agencies have joined the initiative. Key partners include the Food & Agriculture Organization (FAO), CRS Farmer to Farmer, AVSI Foundation, the Embassy of the Kingdom of Netherlands in Uganda, Heifer International, Victoria Seeds Limited, Engineering Solutions, National Agriculture Research Organization, National Animal Genetics Resources Center & Data Bank, Field of Hope, and Fields of Life. These partners have provided an array of support including funding, technology, training, and supplies to be used to deliver the country's recently released instructional strategies.

### Hope in the New Secondary Curriculum

In 2020, the ministry of Education & Sports rolled out a new curriculum beginning with students in senior one (9th grade in the US). Agriculture was made an optional technical subject with experiential learning components, increased technical rigor, and improved pedagogical strategies. Upon completion of the content modules, students have the opportunity to sit for exams to earn internationally recognized certificates.

The future looks bright as more schools start YoFFA chap-

ters, teachers engage with TEFFA, and students begin to see academic and financial returns as a direct result of their engagement with agricultural content and experiential learning. The hope is to stem the tide of student attrition and show students a path toward an agriculture career. The future is getting brighter for Uganda, one agriculture student at a time.

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# Global Experiences & Leadership Development: A Reflection

By Dr. Erin Gorter

The California Agricultural Leadership Program (CALP), the longest continuously operated leadership training experience of its kind in the United States, is the premier program offered by the California Agricultural Leadership Foundation (CALF) (2020). Each year, a cohort of mid-career professionals in agriculture is selected as a Class of Fellows to participate in the leadership program. The CALP is framed by the Diamond Leadership Model (Figure 1), where feedback and reflection inform *Doing, Current Reality, Future Reality, and Being* set to the background of spirituality, character, community, and organization (Lattore, 2021).

A culminating experience of this 17-month program, is participation in an international travel experience guided by a leadership issue. Fall of 2021, CALP Class 50 Fellows traveled

to Germany, Poland, and Czech Republic to explore the phenomena of generational trauma set to the background of World War II, the Holocaust, and the rise and fall of Communism in Eastern Europe. Upon return from this international seminar, as a Fellow in Class 50 and a teacher educator, I find myself reflecting on how I can use these experiences to inform my teaching and how global and historical events can inform leadership development in our learning spaces. Here are some of my thoughts, framed by Lattore's model (2021).

## Enhancing What We Do Through Our Own Risk Taking

We often ask our students to step up and take risks by participating on teams, taking on leadership roles, or trying new teaching methods. In our own roles as mentors, we need to remember to lead by example and

take on these risks ourselves. This includes seeking new, uncomfortable experiences.

The CALP uses the concept of the Presiding Fellow (PF) to encourage this kind of development through assigned days of responsibility during seminars. I had the opportunity to serve as a PF on two travel days, aiding in the transport of the Fellows by train from Warsaw to Krakow in Poland and from Leipzig to Berlin in Germany. There is no quicker way to develop and refine skills in organizing group travel than by doing so in a foreign country, traveling by rail for your very first time. I was highly uncomfortable.

Feeling this discomfort reminded me of what it is like for my candidates teaching their first lesson or attending their first field day in the role of a teacher. Thinking back on my own first public speaking contest as a high school student, it was the same type of nervous energy. I knew I was prepared, but I was still nervous at the moment of the first time having this experience. It is important that we continue to increase our own skill sets by having new experiences, but it is also important for us to

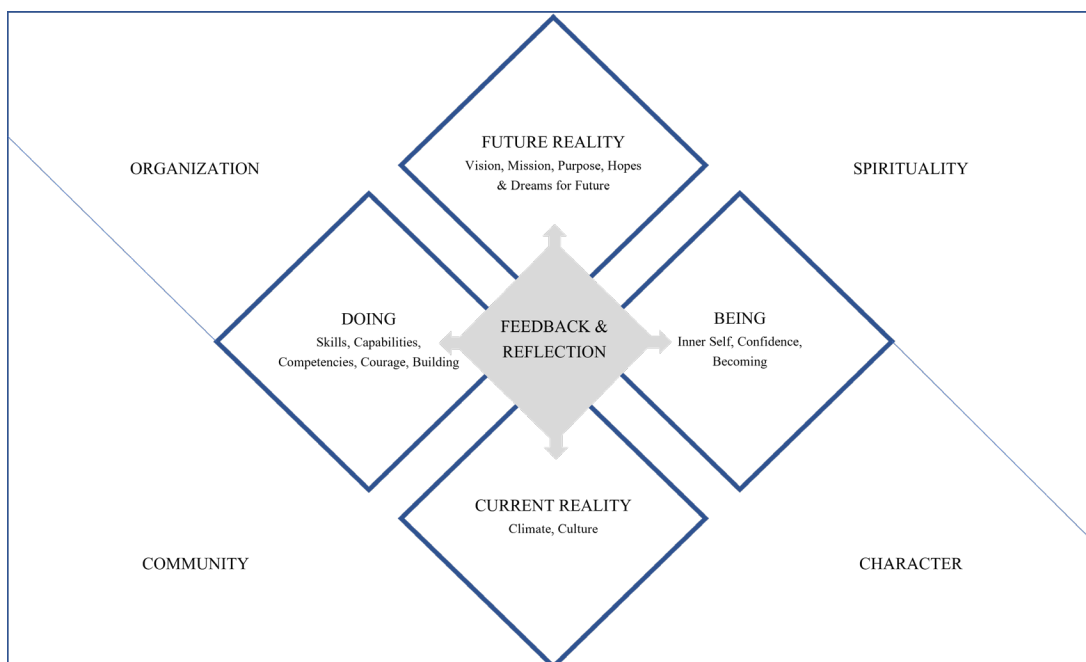


Figure 1. The Diamond Model of Leadership Note. The Diamond Model of Leadership. Adapted from "How We Grow Leaders," by P. A. Lattore, 2021. Copyright 2021 by P. A. Lattore.





(TOP LEFT) Fellows of Class 50 prepare to board the high-speed rail from Leipzig to Berlin.  
 (TOP RIGHT) CALP Class 50 Fellow, Erin Gorter, with Polish cattle rancher, Maria Putz, and her prize bull.  
 (BOTTOM LEFT) CALF Executive Director Abby Taylor-Silva (left) and Fellows of CALP Class 50, Brian O'Neill, Erin Gorter, Brian Gill, Tyler Blackney, and Rocco Cunningham (left to right).  
 (BOTTOM RIGHT) CALP Class 50 Fellows their first night in Prague, Czech Republic.

practice being brave so we can understand what others might be going through when doing something new for the first time. International travel is the perfect way to build skills and practice being courageous.

### **Making Sense of Our Current Reality**

Recently, I have found myself pondering the world and thinking, “what the heck is going on out there?” I can sit at my desk and read about the world and its current climate, or I can leave the safety of my office and get out there and see for myself. We all have this choice. I suggest we choose the latter and encourage our students to do the same.

In our travels, we visited sites of historical significance. We

talked with historians, farmers, scholars, political experts, and survivors of atrocities, learning each story through a different perspective. We stood at memorials built in honor of those who suffered and those who resisted. We ate food with geographical, religious, and historical significance. We experienced fine art in a multitude of formats, including my first classical concert, Vivaldi’s The Four Seasons at the St. Clement’s Cathedral in Prague. Together, we walked through landmarks that echoed terror, defiance, beauty, and hope.

From these experiences, my own reality was clouded, broken, and reconstructed. I suspect this will not be the first time I encounter this cycle of experi-

encing culture and re-informing my own reality. Therefore, we should help our students realize it is okay if our view of the world, or life, changes. This knowledge will aid them in making their own decisions by asking questions, seeking more information, and being life-long learners. If we become stagnant we are setting an example of idleness and that is not the example I want to set. A quote that was coined on our tour during a reflection activity was, “A ship is safe at harbor, but that’s not what ships are for.” We need to encourage students to constantly evaluate their current reality and we can do so by continuing to inform our own by leaving the safe and known.

## Informing Our Future Reality

I have always relied on student goal setting to guide my actions in the classroom. Using goal setting in the classroom was the focus of my induction program my first year of teaching. I used goal setting with my CDE teams. Each student on my livestock judging team wrote down goals the night before a contest. We used these goals to measure growth and inform our weekly practice. I am a firm believer that looking ahead at what you want to be can help you get there. I am also a believer that we need to collect data prior to setting goals to make an informed plan for ourselves. History can be the catalyst to help form our future realities.

I either had poor history education or I was not a super attentive student. Maybe it was a combination of both; we will never really know for sure. What I do know, based on my travel experiences, is I have a knowledge gap, and I can do something about it. This newfound will to learn about history overlaps with my own enlightenment dealing with generational trauma. Trauma does not disappear with the birth of a new generation. I remember a genetics classroom activity on estimating inheritance rates of lethal recessive genes where the students marveled at how long it took to reduce the prevalence of a single deadly allele. Likewise, trauma has a half-life, as does evil. When we are looking to create visions for ourselves, our organizations, and our communities we need to remember the incidents, which shape who we are. Not only to prevent the repetition of errors, but to acknowledge that some scars are so deep they will never vanish.

This applies to people. Understanding where people come from and what impacts their decisions is critical when we are working to foster empathetic

International travel is the perfect way to build skills and practice being courageous.

students who can engage with others. Our students need to understand that behind every decision is a story. Those stories can be happy or horrific. Hearing these stories shapes our visions of the future and delineates what is important and what we stand for.

## Influencing Our Own Being

Something I recently came to recognize is the only thing I have 100% control over is how I choose to act. I can spend my time worrying about the actions of others, but it will probably only end in frustration from all involved parties. That is not productive. I need to focus on myself. While it sounds selfish, it is also the most efficient and effective way for me to help others. If I am not reflecting on my own deficiencies and strengths, I will not grow. If I want my students to grow, I need to show them how to go about it.

Something I always struggled with is engaging with new people. While I find all groups of people overwhelming, groups of unknown people really frighten me. When I began this leadership program, I remember the awkwardness of standing in the lobby at our first seminar surrounded by my 23 other Fellows and their significant others, trying to make small talk, paralyzed with anxiety. Now, 2 years into a 17-month program (thanks pandemic), and a lot of reflection later I have fully embraced this fear as just a part of who I am. Now, instead of fretting in advance of a potentially anxious occasion, I talk myself through what I am going to do. Maybe I encourage myself to start a conversation with one new person: maybe more if I'm feeling extra punchy. Maybe I just look in the mirror and tell myself I can do it.

Showing our students how we work to overcome our own shortfalls is quite powerful. Especially when our stories can serve as a vicarious experience, informing student motivation. Currently, I am friends

with 23 of the most awesome people I have ever met. That friendship started with a very awkward experience in an event center lobby, followed by many vulnerable moments, endless laughs, and a few thousand miles of travel across Eastern Europe. I feel that I am becoming the person I am supposed to be, and I have the confidence to share those experiences with others, including my students, so that they see what is possible.

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# Learning Local, Growing Global: Agriculture, SDGs, and Children's Literature

by Dr. Christine Anne Royce, Dr. Scott Bartholomew, & Lily Stice

There are few challenges, needs, and experiences that are commonly shared by individuals in every nation of the world - differences in climate, social, economic, religious, and culture separate and define us in a multitude of unique ways. However, despite our differences, there are a multitude of things that connect us; the need for food, water, and shelter, the desire for safety and love, and an increasingly connected-world.

Given the consistent need for food and nourishment--regardless of culture, race, or location--a reliance on agriculture is one fundamental piece that connects all of us. In fact, of the seventeen Sustainable Development Goals (SDG) identified by the United Nations, two are directly related to our shared reliance on agriculture: *Zero Hunger and Responsible Consumption and Production* (United Nations, 2021) (Figure 1).

However, despite our shared reliance on agriculture, many of today's children have little to no

understanding of agricultural practices - local or global (FarmingUKTeam, 2017). An understanding, even cursory, of these practices may help younger students in a variety of ways including empathy for those around them, a connection to others of different races, nationalities, and opinions, and in the overall quest towards achieving the SDGs. We present here one way that this may be accomplished: through children's literature about agriculture.

## Use of Children's Literature as a Medium for Instruction

The value of using children's literature to help convey key information and influence student's attitudes has been noted by the Global Literature in Libraries Initiative which launched a blog for book recommendations related to the SDGs (Katieday, 2021). Many of the SDGs, including those related to agriculture, ask students to consider how others are impacted by choices made and how all inhabitants of Earth can improve choices to better benefit both humankind and the environment.

Recognizing an understanding of science, technology, engineering, mathematics (STEM), and relevant social impacts around these goals, there is a high need for incorporating these ideas into everyday experiences of students. Research has shown that one practice, common to many classrooms, can be especially effective at conveying these ideas: the use of children's books (Adhuze, 2016). For example, Hsiao and Shihb (2016) found that using children's picture books to teach environmental concepts influenced their students' actions in making decisions that are related to the impact of human activities on the environment. And, work connecting children's books with each of the SDG's has already been done; for example, *The Good Garden: How One Family Went from Hunger to Having Enough* (Figure 2) can be used to help students address and understand SDG#2 Zero Hunger. This particular story focuses on the ramifications of hunger on one family when their local garden does not produce enough food and how education about and changes to their farming method helped to move the family from food insecurity to sustainability. Recognizing the power of children's books to influence and teach, Adhuze (2016) proposed the use of children's literature in curricular programs for primary and intermediate students toward creating a level of functional literacy which can be utilized to help meet the SDGs.

In addition to educational concepts around environmental



End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Ensure sustainable consumption and production patterns.

Figure 1. UN Sustainable Development Goals related to agriculture.



needs, understanding agricultural concepts and impacts is critical for today's students - not only towards solving the SDGs, but also as a means of creating empathy and understanding in students who may not have immediate connections to agriculture. Table 1 provides an overview of recommended books that would help meet and address agricultural education targets while also incorporating a global perspective on human's reliance on farming - something we believe may be helpful in forging connections among young students and their neighbors around the world.

### Cross Curricular Connections

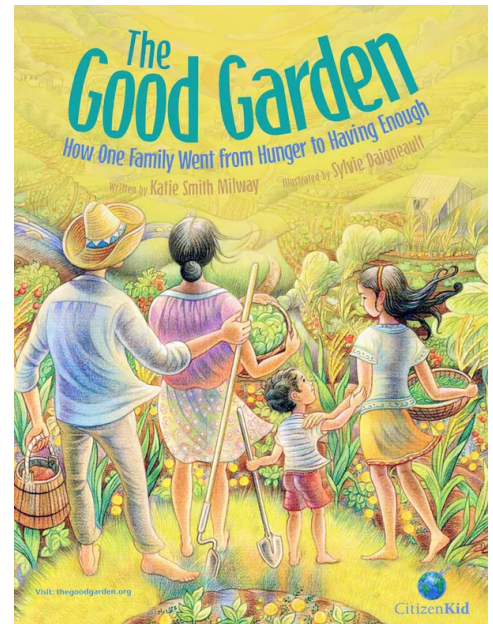
The use of children's books to help inform, educate, and motivate students to learn more about agriculture and how local efforts for sustainable agriculture contribute to these goals is a tool to help transmit these values. The following synopses provide example strategies for integrating books about global agricultural topics or practices into an elementary lesson at the local level. Connections to cross curricular subject areas are provided allowing teachers to maximize their instructional time.

**The Ugly Vegetables.** In this book, a young girl compares her mother's garden of Chinese vegetables to the neighbor's gardens of flowers. Ways to incorporate this book includes:

- Using a map, discuss with students how different types of vegetables are grown or meats are raised in different locations. Ask students to consider what agricultural crops would be considered local for their area.
- Similar to the young girl in the book, encourage students to identify different local dishes that include vegetables or meats and determine if the vegetable or meat is local or grown elsewhere.
- Identify where else those foods are grown and plot the locations on a map.

**The True Story of Teff** helps to highlight how different cultures rely heavily on different types of grains. This story provides information regarding how tiny seeds called teff are cultivated and used in Ethiopia for many of their common dishes. Students can:

- Connect the different foods made from teff. One of the end notes in this story to common



dishes they are familiar with in their home. An example is the use of teff to create injera which are pancake-like items.

- The story discusses how the pictures in the book were created by many different people and represent the farming techniques used in Ethiopia to harvest the grain. Create a chart that helps students identify the information shared about farming teff in the story. Ask them to then research information about a local grain and create a similar book.

Table 1. Example Literature and Connections

Title	Author/Publisher	Grade Level	Overview
From Seed to Harvest	Baby Professor	Grades K-3	A step-by-step explanation of how seeds are planted, sprout, and grow into foods we harvest.
Modern Farms	Jackie Nix Maven	Grades PK-2	This book explains different foods grown on farms and how they are used. Simple examples of modern farm equipment and processes are described.
Moth and Wasp, Soil and Ocean: Remembering Chinese Scientist Pu Zhelong's Work for Sustainable Farming	Sigrid Schmalzer Tilbury House Publishers	Grades 3-6	A historical accounting of how farming in rural China was improved through the work of Pu Zheong's work in sustainable agriculture.

My Family's Soybean Farm	Katie Olthoff Feeding Minds Press	Grades K-3	A young boy takes the reader through the process for planting, growing, harvesting, and the use of soybeans for food.
Our Community Garden	Barbara Pollak Beyond Words	Grades PK-2	Children from varied backgrounds and cultures collaborate to grow a community garden and share information.
Tales of the Dairy Godmother: Chuck's Ice Cream Wish	Viola Butler Feeding Minds Press	Grades K-3	Chuck learns about the steps and processes that go into making the ice cream he is wishing for as a treat.
The Farm Feeds Us: A Year in the Life of an Organic Farm	Nancy Castaldo Quarto Group	Grades 3-5	Readers explore the workings of a small, family organic farm throughout the year to better understand what organic farmers do to produce food.
The Good Garden: How One Family Went from Hunger to Having Enough	Katie Smith Milway Kids Can Press	Grades 3-5	In short chapter format, this book highlights how family farmers in Honduras are taught sustainable agriculture ideas to help improve their own garden and thus improving their lives.
The Great Irish Farm Book	Debra McCullough Gill Books	Grades 3-6	In-depth discussion about family homestead farms in Ireland ranging from machinery to animals to historical aspects.
The True Story of Teff	Seenaa Dhugaa Xaafii Ready Set Go Books	Grades K-3	Information about how teff, a grass that can be turned into flour, is grown in Ethiopia and used in foods.
The Ugly Vegetables	Grace Lin Charlesbridge	Grades PK-3	A young girl compares her mother's garden of Chinese vegetables to the neighbors' gardens of flowers before exploring how the vegetables are used in different food dishes.
World of Farming: Farms Around the World	Catherine Veitch Heinemann Raintree	Grades PK-2	Identifying what a farm is, what is grown/raised on farms, and how food and materials are transported from farms around the world.

***Moth and Wasp, Soil and Ocean: Remembering Chinese Scientist Pu Zhelong's Work for Sustainable Farming*** tells

the story of a scientist who was helping farmers understand STEM concepts for farming many decades before STEM became an acronym. Throughout the story sustainable methods are introduced as replacements for more harmful practices.

- Intermediate level students can dissect the story to learn more about different sustainable methods of farming and create a pro and con comparison for different methods.

The inclusion of global agricultural concepts in lessons, through the use of these and other books, can impact learning in multiple ways. These recommendations are but a few examples of how children's literature can help connect agriculture at the local and global level and bring the SDGs into the classroom. Ultimately, students need to understand and experience different components of farming and agriculture locally in order to connect it to the global scale. All of the elements in one location have an impact on and function for learning about other

locations (Smeds, et al., 2015). By incorporating lessons about agricultural topics in the local classroom, we can help students see the relevance and importance of agriculture as it relates to improving lives on a global scale.

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# Going Global by Teaching Local: Using the U.N. Sustainable Development Goals to Increase Awareness of Global Issues

by Dr. Shannon L. Norris

**T**he world needs leaders with an aptitude to develop a global perspective.

No doubt, the world is becoming more and more connected. Due to trade through global markets and interaction through broadly accessible communication platforms, people can interact with multiple cultures around the world with a simple click. As the world's degrees of separation narrow, the need for nurturing student's global mindedness expands. Exposing students to global issues early in their academic careers is a vital step in preparing them to not only meet the needs of the future workforce, but also to develop cultural sensitivity, empathy, and awareness.

When led to action, informed perspectives can spark an engaged mindset. Hett (1993) operationalized global mindedness using five constructs—responsibility to care for others, appreciation for cultural pluralism, commitment to celebrating differences, consideration of global issues when making decisions, and enthusiasm to participate in interconnected activities. Lister (2019) furthered this concept by stating, “Solving global problems becomes a global responsibility because we now have an insight into everyone’s challenges” (para. 10).

Global mindedness is not just an awareness, it is a commitment.

The need to teach global mindedness increases every day. However, teaching global issues during a global pandemic can present its own challenges. The good news is global mindedness can be taught anywhere, despite travel, budget, or location limitations.

As the world's degrees of separation narrow, the need for nurturing student's global mindedness expands

## THE GLOBAL GOALS For Sustainable Development



Figure 1.  
U.N. (2021)  
Sustainable  
Development  
Goals (SDGs, or  
the Global Goals).  
The content of this  
publication has not  
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## U.N. Sustainable Development Goals

In 2015, the United Nations identified 17 focus areas to work toward a more sustainable future and raise awareness of global issues. The U.N. (2021) Sustainable Development Goals (SDGs, or the Global Goals) provide a framework for opportunities to end poverty, address inequality, and tackle environmental challenges that threaten global populations. Using the 17 SDGs in secondary school-based agricultural education or in higher education classrooms could be a strategy to increase awareness of global issues and address them locally.

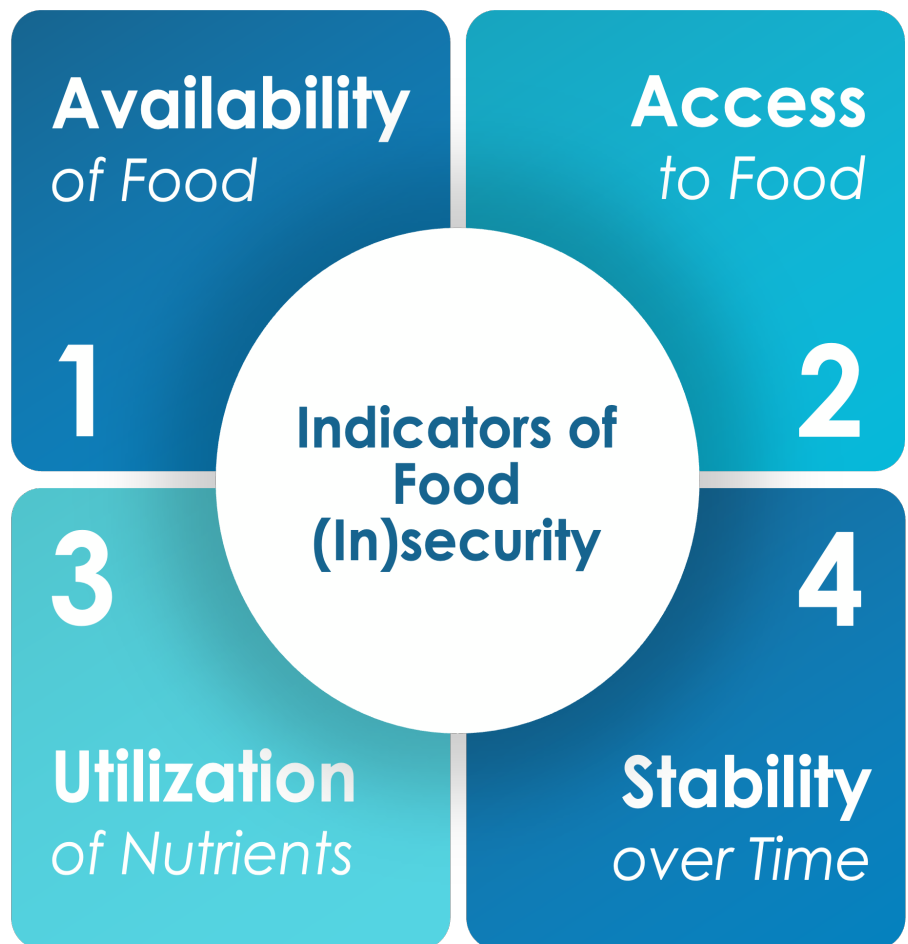
Agriculture weaves a common thread through the 17 SDGs. The first two, *Goal 1: No Poverty* and *Goal 2: End Hunger*, address food (in)security challenges across the globe as the battle to eradicate poverty and eliminate hunger persists. The Food and Agricultural Organization (FAO) of the United Nations (2008) identified the four key indicators of food (in)security as the availability of food, access to food, utilization of nutrients, and stability over time. Food insecurity occurs when one or more of these indicators are out of balance. Sadly, food insecurity is not uncommon, even in the United States.

Exposing students to elements impacting global food (in)security is valuable to helping them experience the magnitude of challenges potentially faced by their local communities.

Hett's (1993) fourth construct of global mindedness is consideration of global issues when making decisions. Therefore, following exposure to food (in)security realities, educators can help students imagine innovative agricultural solutions to be applied at home and abroad.

### Strategies to Foster a Global Mindset

To foster a global mindset, students need to engage creativ-



Adapted from FAO (2008).

Figure 2. Indicators of Food Security (FAO, 2008).

ity, build knowledge, and practice skills related to international perspectives (Tichnor-Wagner, 2016). Below are a few suggestions to increase global mindedness in agricultural education courses.

For more ideas, visit the resources tab on the U.N. (2021) Sustainable Development Goals website.

#### Engaging Creativity

Provide exposure to different issues in the world and allow students to dream of solutions to those challenges. As a student's critical thinking skills improve and awareness of cultural nuances increase, their solutions and ideas will become more refined. However, many times, allowing students to engage their creativity can start by asking students "What if...?" to varying scenarios, such as "What if we could

decrease the amount of fresh water needed to produce a field of corn? What would be needed to accomplish that aspiration?" Then, allow students to dream and research hypothetical scenarios. While the accuracy of their responses may vary, allowing students to picture themselves in the scenarios and dream of solutions helps build empathy and reinforces global mindedness. Students can also keep a reflective journal of their musings with global issues (Rice et al., 2014), which can connect ah-ha moments for students and develop strong critical thinking skills and creative processes.

#### Building Knowledge

Exposure to scenarios that people from various cultures may face can help students build new knowledge of global issues

and challenges. Encourage students to compare and contrast differing cultures or agricultural production techniques that could be influenced by those cultures. When students learn new information, especially if they have no experience with the concept, they subconsciously relate the new information to what they already know. As a result, Venn diagrams could be helpful tools to reinforce relationships between students' local communities and other regions in the world. It may also be helpful to have students capture ah-ha moments throughout the process so they can form reactions to the new information and further develop empathy. Finally, challenge students to investigate the scope of each of the 17 SDGs. Encourage students to investigate the aims of each goal, record why they exist, list target areas to address each goal, and brainstorm local actions to be taken.

### Practicing Skills

Practicing skills can take many forms in agricultural education classrooms. For example, if possible, have students manually cultivate land in a school garden or farm with simple, rudimentary tools to experience the labor necessary to produce food without mechanized equipment. Second, teach students a series of vocabulary terms in a foreign language, and have students investigate the cultural root of each word and how the words can be used in a sentence. Encourage students to learn new words and seek opportunities to casually use them in a conversation. Depending on the mastery level of the new language, students can use these skills in service-related activities with non-English speakers in their schools and/or communities.

Finally, consider additional opportunities to allow students to mimic physical, emotional, or spiritual experiences that differing cultures may endure to provide real-world context. For instance, Field of Hope (2021) is a

non-profit organization that hosts a virtual 6K walk and fundraiser to raise awareness of the distance an average African woman walks in one day to bring water to her family to drink, bathe, wash clothes, water animals, etc. Organizing students to partake in activities such as these will allow them to practice their skills by doing, which is vital to advancing a global mindset.

### Start Small, Impact Big

Developing a global mindset does not require a passport, and it does not require traveling across the world. While immersive experiences are invaluable, the steps to building a global mindset can start local, and they can be simple. Encourage students to engage their creativity, build their knowledge, and practice their skills to develop international perspectives and act on the 17 Global Goals at home.

Sometimes simple can have a global impact.

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# The Global Case for School-Based Agricultural Education (SBAE)

## A Comprehensive Transformative Food Security Solution for Africa

by Dr. Jack Elliot, Meikah Dado, & Jessica R. Spence

### The Problem

According to the United Nations Food and Agriculture Organization (2018), Africa's population stands at 1.2 billion and over half of its population is under the age of thirty, signifying that youth constitute most of the continent's population. The term "youth" is traditionally defined as a period of transition from childhood to adulthood. The African Youth Report (2009) categorized youth as people between 15 and 39 years of age. An obstacle facing the youth population is the inability of governments and policymakers to provide opportunities that help youth have decent lives and contribute to the economic development of their countries. The World Bank (2017) estimates Africa's population is growing

faster than the jobs being created, and by 2035, about 350 million new jobs will be needed to meet the needs of its youth population. With the increasing population rate, there is a potential for agriculture to create employment, however, African youth in Sub-Saharan Africa, oftentimes, do not realize agriculture as a profitable opportunity for livelihood.

The involvement of youth in Africa's development cannot be overemphasized, and international development organizations are consciously choosing to include this population in various development objectives. Investment in education and training is essential in building an educated and skilled workforce and to encourage innovation (McKnight, 2021). The United Nations Sustainable

Development Goals (2021) have pledged to "Leave No One Behind" in the balance of economic, social, and environmental sustainability, where everyone is needed to achieve the 17 ambitious goals, particularly youths.

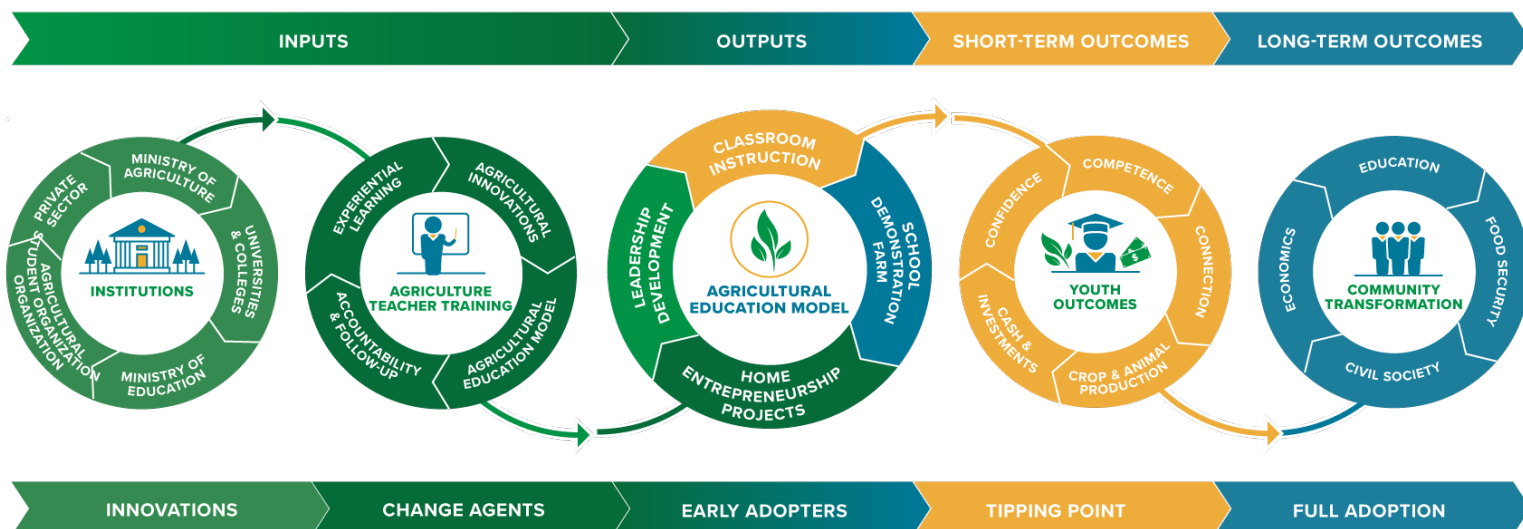
Agriculture, as a career option, is becoming viable to young people again in many places around the world as the reality of finding solutions to feeding our fast-growing planet is evident in many disciplines. Nonetheless, the concept of solving complex world problems requires the collaboration of governments and policymakers. Yet, in many parts of Africa, agriculture is still perceived only as backbreaking toil of the soil. As a result of this poor perception, and historically driven education systems, agricultural initiatives receive little policy and government attention.

Sub-Saharan Africa is home to almost one billion people. By 2050, the population of the region is expected to double, and half will be under the age of 18. Known as the "youth bulge," this sudden population explosion will exacerbate challenges around youth employment and food security unless policymakers take decisive action today. Agriculture is central to both the economic progress of the African region, and achievement of the Sustain-



*Junior High School students in Twum Guaso, Ghana show off their new carrot crop from their school garden.*

# SCHOOL-BASED AGRICULTURAL EDUCATION SYSTEM



## DIFFUSION OF INNOVATION

Figure 1. SBAE System

able Development Goals (UN, 2021). Youth, as change agents, can be the catalysts within their communities to drive the uptake of improved agricultural innovations, leading to agricultural transformation. Youth, often viewed as only a source of labor inputs, are key change agents in the transfer of technology and science in school-based agricultural education (SBAE). Community members often improve their agricultural practices as they observe SBAE demonstrations and outcomes. Reaching youth where they live and learn, SBAE equips young people with the vocational and life skills necessary for agricultural progress (McKnight, 2021). SBAE is supported by evidence-based programmatic and advocacy efforts underway to advance SBAE in Africa. SBAE innovatively overlays the logic model framework (McNamara, 2019) within the diffusion of innovation model (Rogers, 2003).

### The Process

Does deliberate learning with youth achieve concrete agricultural development outcomes and outputs that are sustainable within their communities? SBAE programs are increasingly

adopted by international development organizations to create an enabling and experiential learning environment for youth to become community change agents. SBAE is a comprehensive youth education initiative centered on enhancing leadership skills; and improving agricultural knowledge, techniques, application, and production agriculture for junior and high school-aged youth with the goal of improving sustainable agricultural production, economic impact, and community livelihoods (Croom, 2008, Elliot, 2007, Elliot & Redwine, 2020, & McKnight, 2021). The SBAE System is guided by adopting the diffusion of innovation model (Rogers, 2003) and adapting it within a logic model framework (McNamara, 2019) to guide their evidence-based results. The central focus of the SBAE System is Kolb's Experiential Learning Cycle (Kolb, 1984) identified as the Agricultural Education Model. Figure 1 illustrates the relationships among these three components.

SBAE is much more than "school gardens." The System is comprehensive and transformative. Specifically, the SBAE System embraces the document, "Empower Youth, Transform Ag-

riculture: An Introductory Guide to SBAE in Sub-Saharan Africa" (McKnight, 2021). Through this system, students gain hands-on experience, a deeper understanding, opportunity to explore and reinforce interests in agriculture, and be supported through an enriching education.

### A Solution

The multidisciplinary SBAE approach is supported by over one-hundred years of proof-of-concept scholarship and a rigorous programmatic research team representing seven global universities and several NGOs (Croom, 2008, Elliot, 2007 & McKnight, 2021). The evidence generated uniquely allows for successful deliverables that are sustainable, scalable, and contemporary. Securing government support and commitment is critical to ensure successful implementation of the SBAE. The advocacy portion of this model, the Movement for SBAE, engages governments, policy makers, agriculture community leaders, and local authorities. These innovative activities are essential for sustained engagement and adoption of SBAE efforts.

Scaling up efforts are proposed to be integrated and strategically

timed to secure early and continued support of SBAE by local, national, and regional influencers, experts, and policymakers.

## Implications

The uniqueness of this system is its comprehensive understanding of the scaling-up process. The SBAE system embraces the experiential learning cycle and is guided by adopting the diffusion of innovation model and adapting it within a logic model framework to guide their work which provides evidence-based results (Kolb, 1984; Rogers, 2003; & McNamara, 2019). This step is crucial as amplification occurs across the African continent. Results that are reliable, valid, and usable can change perceptions among decision-makers and increase levels of support for SBAE.

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