Tanzanian agricultural trip and trainings with KinoSol

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Tanzanian agricultural trip and trainings with KinoSol

by

Rebecca Lyons

A creative component submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

Major: Agricultural Education

Program of Study Committee:
Scott Smalley, Major Professor
Mark Hainline
Robert Martin

The student author, whose presentation of the scholarship herein was approved by the program of study committee, is solely responsible for the content of this creative component. The Graduate College will ensure this creative component is globally accessible and will not permit alterations after a degree is conferred.

Iowa State University
Ames, Iowa
2019
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ABSTRACT

This creative component consists of program planning for an agricultural excursion to Tanzania. This trip was led by two members of the team from KinoSol, an agricultural technology company based in Ames, Iowa. This travel opportunity was offered for any interested American adults. KinoSol provided this program in order for more individuals to have a role in educating smallholder farmers in Tanzania about post-harvest loss reduction practices. A portion of the trainings specifically focused on the use of the Orenda, a small-scale solar-powered food dehydrator developed by KinoSol. This program was developed through the use Rosemary S. Caffarella’s “Interactive Model of Program Planning.
CHAPTER 1. INTRODUCTION

Background

I, Rebecca Lyons, am the operations manager for KinoSol, a startup that developed a solar food dehydrator. These are used by smallholder farmers in developing regions of the world, and at this time, the target market is especially in Uganda and Tanzania. The company holds trainings for these farmers, and as of January 2019, KinoSol also takes American travelers along to participate in the trainings and to learn about sustainable agricultural development in eastern Africa.

Meet KinoSol

In 2015, a group of Global Resource Systems students at Iowa State University incorporated their company, KinoSol, as a Specific Benefit Corporation. A Specific Benefit Corporation is a legal entity that allows socially and environmentally conscious companies to put those values in their charter and articles of incorporation. KinoSol’s specific benefit purpose is, “To help subsistence farmers reduce post-harvest loss” (KinoSol, 2015).

Post-harvest loss is food waste that occurs prior to reaching the market or a consumer’s plate. This loss occurs during harvesting, processing, or storage. In developing regions of the world, forty percent of losses occur at this level (FAO, 2019). Improved methods of preservation and storage can reduce losses, increase access to nutrition, and better the health of consumers in developing regions.

KinoSol saw an opportunity to address the issue of post-harvest loss through a solar-powered food dehydrator called the Orenda. Orendas can dehydrate fruits, vegetables, grains, and insects,
with solar energy alone. This product was designed with input from users, as field-testing was completed in forty-two countries worldwide.

During December 2017, two KinoSol co-founders held trainings for smallholder farmers with the eighth Orenda prototype in Uganda and Tanzania. The purpose of these trainings was to do product demonstrations with the Orenda, while educating the farmers in attendance about the importance of reducing post-harvest loss. These KinoSol-led trainings proved to yield more successful adoptions of the product than when previous prototypes had simply been sent with churches, nongovernmental organizations, or other aid organizations.

Need: Post-Harvest Loss Education and International Agritourism

As proven through the trainings with prototype eight, the need for reduction of food waste could not simply be met by handing Tanzanian and Ugandan farmers Orendas. Organizations KinoSol had partnered with previously would simply purchase and deliver the product, but there was no training. Maximizing user adoption would require an educational component.

After completing the successful round of trainings with prototype eight, an idea was proposed by KinoSol’s CEO to expand the educational impact of KinoSol. While continuing to focus on food waste reduction, a unique opportunity was identified in which KinoSol’s mission could be shared with other Americans. This could be done by offering trips to eastern Africa led by the KinoSol team. Bringing American tourists along to assist in carrying out these trainings involved a “train the trainer” model. See the Figure 3 under “Methods” for a further explanation of this model.

Another need that was addressed through this program was promotion of global citizenship and cultural awareness. The agricultural industry in America differs greatly in
commodities and practices when compared to African agriculture. This program provided an opportunity for American travelers to learn about other methods of producing agricultural products, broadening their global perspective.

Purpose and Objectives: Trainings and Trips

The central purpose behind the travel program was to have Americans engage in international agritourism while providing KinoSol with additional hands to assist with agricultural development, particularly with facilitating trainings on the Orenda and post-harvest loss reduction. The objectives for the trip were two-fold. The objectives for the American tourists were for them to be able to demonstrate appropriate post-harvest loss reduction techniques and return to the U.S. able to describe the Tanzanian agricultural industry. The objective of the trainings for the Tanzanian smallholder farmers was for them to be able to utilize post-harvest loss techniques and technologies, including the KinoSol Orenda, within their farming operations. Having a dual audience provided an exciting educational challenge for the KinoSol team.
CHAPTER 2. LITERATURE REVIEW

Conducting agricultural education for subsistence farmers in developing regions of the world with the assistance of American travelers entails considerations that are unique to adult learners. Additionally, some program planning implications are resultant of the political instability in the regions where development work is being carried out.

In the article, “Extension – A Citizen of the World,” it is stated that America’s agriculture is directly connected to global markets and development (Patton, 1984). Therefore, it is important for Americans to become educated about international agriculture. A point that this article also brings up is that hunger is a complex issue with implications regarding moral, political, and economic circumstances (Patton, 1984). Recognizing this, development organizations must strive to be cognizant of such issues while going about their work abroad.

As mentioned in the Patton article, political issues impact food security. Unsurprisingly, political situations additionally play a role in the ability to execute agricultural education internationally. When political unrest occurs, organizations must be adaptive and find ways to overcome such barriers. According to research done on Zoom trainings in Burundi, Africa, videoconferencing is a viable means of continuing trainings in areas where political unrest is occurring (Scanga, Deen, Smith, & Wright, 2018).

An organization that recognizes the need to expose Americans to the global agricultural industry is USAID’s program called “Farmer-to-Farmer.” When planning international programs involving American travelers, there are unique challenges that must be confronted regarding constraints experienced by the travelers. Challenges that were identified by USAID include, “lack time, lack of financial support, lack of language skills, and family commitments” (Bates, 2006).
The subsistence farmers that are educated through development efforts also pose challenges that must be overcome. Adopting new sustainable agricultural practices is not an instantaneous activity. It takes time, and the execution of the educational component is vital in the successfulness of the adoption. Change is difficult, and not only is sustainable technology a change in habit, but a change in use of finances. It is well-said in “Barriers to Adopting Sustainable Agricultural Practices.” The insight provided within this article is as follows: “It is clear that farmers understand sustainability requires economic viability as well” (Drost, Long, Wilson, Miller, & Campbell, 1996). This highlights the importance of teaching about the financial benefit of using the new technology.

There are considerations to take into account when educating adult learners in general, regardless of cultural background. As discussed in “Training and the Needs of Adult Learners,” adults believe “they are responsible for their lives” (Ota, DiCarlo, Burts, Laird, Gioe, 2006). This is important to note because when adults feel they are responsible for their learning and lives, the way in which they are motivated is impacted. People in developing regions of the world may be motivated to learn about new technologies so that they can better their livelihood. American travelers may be motivated to learn about another culture so they can become more well-rounded individuals. Either way, this self-concept is key in shaping the educational experience.

Ultimately, when conducting agricultural education internationally, it is necessary to be aware of the considerations that need to be made relative to the sphere in which the organization is operating in, such as political unrest. As well, detail must be paid toward meeting the learner needs during the program planning process, especially regarding the age of the learners. In the case of exposing American travelers to development work, as well as educating subsistence farmers, conditions for adult learners must be optimized.
CHAPTER 3: METHODS AND PROCEDURES

The purpose of this program was fulfilled and the objectives were met by adhering to components of the “Interactive Model of Program Planning” while coordinating the trip and trainings. Once the goals and objectives of the program were identified, the KinoSol team set out to identify and prioritize needs related to implementing the program.

A primary need was a solid base of support. To implement the program successfully, having Tanzanian partners was vital. KinoSol had previously collaborated with Innocent and Inno Tugume from Mwanza, Tanzania. The Tugume brothers are agricultural entrepreneurs in Tanzania who also have experience leading tours throughout the country. The Tugumes helped KinoSol identify locations to hold the trainings. One training was held at a compound in Mwanza, Tanzania and another was held outdoors at a school in Sengerema, Tanzania. They also assisted the KinoSol team with developing the itinerary (See Appendix E.) and the budget. The schedule was designed to include a balance of trainings, agritourism activities, and general Tanzanian cultural experiences. When crafting the budget and determining a program cost for participants, the KinoSol team planned it in such a way that the expenses of the KinoSol leaders would be covered. Primary budget items were airline tickets, hotels, meals, transportation in Tanzania, entrance fees, and visas.
Besides the Tugumes, strategically staffing the program was another way in which KinoSol strived to build a solid base of support. I led the group of travelers for the entire twelve-day duration, and KinoSol’s CEO, Mikayla Sullivan also assisted in leading the group during the first few days that we were in Tanzania. Other staff needed for the program to prevail included an English-Swahili translator to aid in the trainings and Tanzanian guides who were coordinated through the Tugumes’ tour enterprise.

A large piece of the process of planning this trip was creating pre-departure materials, as seen in the products of Chapter 4. As a part of creating the pre-departure materials, instructional design took place. This particularly occurred through the generation of the Community Introduction Training Guide. This guide, along with the How to Build an Orenda video were distributed and explained to the participants in the months prior to departure, and the KinoSol team reviewed these materials with the participants upon arrival in Tanzania, as well. I made the guide using feedback from the KinoSol co-founders regarding what worked well and what was lacking during the 2017 trainings.

Though all aspects of the “Interactive Model of Program Planning,” were utilized, one of the most valuable pieces was details. As stated in Planning Programs for Adult Learners, “Handling the logistical end of the program often feels like a thankless task; yet if these chores are not done well they can negatively affect all aspects of education and training programs” (Caffarella and Daffron, 2013, p. 359). The detailed logistical activities were carried out during weekly team meetings in which the KinoSol team strategized and planned the trip. In the final month and a half leading up to the trip, weekly emails were sent to the trip participants with details and reminders about the trip. Sample emails are included in Appendix F. Phone calls were held with
the travelers to go over the Tanzania Travel Information Packet and a Zoom conference was held
to cover an Orenda assembly demonstration and the Community Introduction Training Guide.

As noted previously, KinoSol employed a “train the trainer” model, visible in Figure 3. In
this model, the American travelers were both the educator and learner. They were educators in
that they assisted the KinoSol team in training the smallholder Tanzanian farmers. They were
learners in that they learned about Tanzanian agriculture and sustainable development from the
KinoSol team and from Tanzanian tour guides. This exemplifies KinoSol’s *transfer of learning*,
in accordance with the “Interactive Model of Program Planning.”

![Figure 3: KinoSol’s transfer of learning](image)

Program evaluation, though often overlooked, is an important piece of program planning. To
evaluate the program, I conducted video interviews with the participants at the end of the trip. A
video compilation of the participants’ responses is linked in Appendix G. Additionally, I emailed
a post-trip survey to the three travelers. The survey questions are included in Appendix H.
CHAPTER 4. THE PRODUCTS

To bring the trainings and trip to fruition, materials were created to prepare and educate the American travelers ahead of departure. The four items that were made were a trifold brochure for advertising the program, a Tanzania travel information packet, a video of how to use the Orenda, and a community introduction training guide. These items were all used to equip the travelers to also be assistant trainers of the smallholder farmers that they would interact with during the course of the trip.

Marketing Brochure

The first piece of material was a brochure for the purpose of advertising the agritourism opportunity to American travelers. In regard to the “Interactive Model of Program Planning,” this brochure was a part of KinoSol’s Marketing efforts. (Other Marketing activities were carried out through in-person presentations and via the company’s social media platforms.) This brochure addressed eligibility, pre-travel requirements, included an FAQ section, the itinerary, as well as information about the program, including the trip’s impact. The contact information for a KinoSol team member and the KinoSol website were also included on the brochure. This brochure was distributed to organizations whose members the KinoSol team suspected would potentially be interested in partaking, such as Rotary clubs and churches throughout Iowa. The brochure is included in Appendix A.

Tanzania Travel Information Packet

Once travelers applied via KinoSol’s website and were accepted to the trip, they were mailed and e-mailed a three-page packet of travel information. This packet included logistical information, such as a pre-departure checklist, an explanation of how meals would be handled during traveling, a packing list, Tanzanian seasonal weather condition information, health and
safety materials, and the trip leaders’ contact information. This logistical information was critical for the participants’ wellbeing and for the smooth execution of the trip. See the Tanzania Travel Information Packet in Appendix B

**Video: How to Build a KinoSol Orenda**

Since key components of the KinoSol trip were the trainings for Tanzanian farmers, it was crucial that KinoSol educate the trip participants about the Orenda solar food dehydrator in advance. A video about how to assemble the KinoSol Orenda was shared with the trip participants. This video was initially created in an effort to visually show farmers who purchased the Orenda, but did not attend a training, how to assemble the Orenda, but it was ideal for teaching the trip participants too. Although there is English text throughout the video, it is highly visual in describing the assembly process so that non-English users can still understand. Note: I created the storyboard for the video, directed the filming, and was the person featured in the video, but the video design was completed by another KinoSol team member, Rachel Pollastrini. See Appendix C for the video link.

**Community Introduction Training Guide**

The fourth and final component of the pre-departure materials was the “Community Introduction Training Guide.” This guide’s goal was to prepare the trip participants to aid the KinoSol team members in educating Tanzanian farmers about post-harvest loss and the Orenda solar food dehydrator. The training guide provided the American travelers with information on Orenda assembly, best practices for dehydration, and the benefits of dehydration. The training guide is included in Appendix D.
CHAPTER 5. CONCLUSION

Reflection

This trip was a tremendous learning opportunity from both a company standpoint, as well as in regard to professional growth for me. By incorporating Caffarella’s “Interactive Model of Program Planning” into the preparation for KinoSol’s January 2019 trip, I am a more experienced program planner and can demonstrate what it takes to plan a robust educational international agritourism trip with a training component.

A major lesson that I learned was in regard to adaptability. During the course of the trip, Inno Tugume tragically needed to attend several funerals for close acquaintances. This meant that some of the duties Inno was originally responsible for were delegated to others. One night there was a slight glitch with my hotel reservation, but through communication with the hotel staff, I was able to resolve the issue. Regarding adaptability, I was challenged to abide by “Africa time.” Contrary to the way in which punctuality is an expectation in the United States, great patience is needed in Tanzanian culture. Another way in which I had to adapt was that I had never before given a presentation that required translation. This tested me because every several sentences I would need to pause for the translator to interpret my English into Swahili for the farmers, and then gather my thoughts again and continue with what I had been saying.

There were times throughout the trip in which I had to quickly problem solve and spontaneously improvise. However, based on the post-trip survey responses, it is apparent that I executed a well-run trip. One participant stated, “During the trainings, people asked good questions, which is a good sign of engagement. The presentations were well-organized and executed. Rebecca gets high marks, good job” (Bartlett, 2019).
Overall, this graduate program in Agricultural Education and completion of the Tanzanian agricultural trip and trainings with KinoSol has impacted me professionally in that it has equipped me with the educational methods necessary to implement quality agricultural programs. People often ask me about post-graduation plans and whether I will be teaching or not. I respond by explaining that I will be continuing with KinoSol and will indeed be teaching, although the teaching will not occur within a classroom setting. This program has deepened my love for teaching about agriculture in non-classroom environments and using education as a means for sustainable development internationally.

Recommendations

With insight gained from my own experience planning the program, as well as participant feedback, I make the following recommendations for future KinoSol programs or similar trips planned by other organizations. To increase the number of participants, I recommend sharing the marketing brochure with more people. The trip participants were given KinoSol drawstring bags with KinoSol apparel, fans, snacks, and sunscreen, which were well-received. A suggestion I would make regarding the bags would be to include educational material in them, such as maps and information about the country. Continue sending weekly pre-departure emails to the participants. These were found to be helpful by all.

Itinerary recommendations that I have are as follows. Although the participants were adults, next time, I would recommend more structure than what was provided during the January 2019 Tanzania trip. Though free time to explore independently went well, the feedback from the participants was that having more activities arranged would have been appreciated. Spending even more time with local Tanzanian farmers is another recommendation.
The KinoSol team allowed participants to be as involved in the post-harvest loss trainings as they liked, but it would be useful to be more explicit about exactly how the travelers fit into KinoSol’s work. To complete this better in the future, KinoSol brought on Robert Odoi in April 2019, an experienced post-harvest loss training developer who will work closely with me to develop a more robust training guide. This training guide will be organized more like an instructor’s manual. As a part of future trainings, I recommend having a segment on cost analysis with real numbers describing the way in which the KinoSol Orenda will help the smallholder farmers be more profitable. My final recommendation is to have a flyer for the smallholder farmer attendees to take home following the training. These should be highly visual and written in their native language.

Extensions

Expanding upon the trip that was taken during January 2019, KinoSol will now be offering such trips for college credit. KinoSol is doing so by partnering with community colleges and universities. As of April 2019, partnerships have been formed between KinoSol and the following post-secondary institutions: Hawkeye Community College and Iowa State University. The study abroad class will be offered as a three-credit course and can meet requirements for social entrepreneurship, international perspectives, agricultural business, or independent study, depending on the institution.

The value that these trips will bring to students will come in the form of hands-on learning and the development of cross-cultural skillsets through their assistance with trainings in rural communities. The study abroad trips during 2019 will take place in Uganda. The reasons for this are that travel to Uganda is more affordable than Tanzania and that KinoSol’s partner in
Uganda has proved to be more reliable. Students will learn about Ugandan agriculture and implement KinoSol Orendas.

For KinoSol, these trips will involve coordinating in-country logistics, as well as pre-departure orientations and post-trip debriefs with the student travelers. During the pre-departure orientations, which will be more frequent and more in-depth than for the January 2019 Tanzania trip, the following topics will be covered: course syllabus, trip itinerary, Uganda travel information (safety, health, visa, etc.), Orenda post-harvest loss reduction trainings, and how to conduct international agricultural market research with smallholder farmers. The travel course will have a twelve-day duration. A professor at each university will be responsible for the grading portion of the course. Challenges expected from KinoSol’s end include student recruitment and expansion of partnerships beyond Iowa institutions. With experience gained through implementing the January 2019 Tanzania program, I am confident that this extension will be accomplished well.
TRIP IMPACT

During this trip KinSoSol and travel participants will be working with 2-3 communities in Tanzania to implement our solar food dehydrators through community trainings. Each KinSoSol dehydrator supports an average of 6 individuals, providing them with more nutritious food during months of no harvest, and an additional revenue stream selling dried outputs at local markets.

You will have a chance to experience the communities gratitude first hand. Not only will this trip positively change the lives of people within the community, but you can expect to feel a difference in your own life. This trip will open your eyes to a new perspective on ways of life, giving you a more global perspective.

CONTACT

For any additional questions regarding KinSoSol’s work or this travel opportunity please contact us:

Email: mikayla@getkinosol.com
Phone: 515-200-0236
Website: www.getkinosol.com/ourtrip

THE PROGRAM

KinSoSol is bringing a group of individuals to Tanzania, to participate in community training, cultural immersion, and an amazing travel experience. During the course of this trip, you will work with small-scale farmers throughout Tanzania, and you will be given an incredible opportunity to learn more about traditional agricultural practices, such as tropical fruit and coffee production.
**FAQ**

**Where is the trip?**
The trip will be to Tanzania. Travel specifics will be covered in the pre-travel meeting held in December.

**What are the risks of the trip?**
KinoSol has worked to mitigate risks on this trip, but with any international adventure, there are always risks of becoming sick or injured. Precautionary measures will be covered in the pre-travel meeting.

**What if I have never traveled before?**
KinoSol welcomes all experience levels of travelers for this trip. However, if you do not have a passport, we recommend you apply for one as soon as possible.

**What is the cost of the trip?**
The trip cost is $4,200.

**What is included in the trip?**
All in-country expenses are included (entrance fees to Serengeti & Ngorongoro Crater, transportation, food & accommodations).

Participants will be required to pay for their passport, visa to Tanzania ($100), travel insurance ($30), and airfare (roughly $1,500).

**How do I secure my spot on this trip?**
Contact Mikayla (mikayla@getkinosol.com) to receive a travel application. Applications are due by October, 31st.

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**ITINERARY**

January 6-16th

- Day 1: Leave USA
- Day 2: Arrive in Tanzania
- Day 3: Community Training in Mwanza
- Day 4: Community Training in Sengarema
- Day 5: Serengeti National Park
- Day 6: Serengeti National Park
- Day 7: Ngorongoro Crater
- Day 8: Moshi City Exploration
- Day 9: Coffee & Waterfall Tour
- Day 10: Depart Tanzania
- Day 11: Arrive in USA

*Travel Itinerary and dates subject to change*
APPENDIX B

Tanzania Travel Information

PRE-DEPARTURE CHECKLIST

☐ Email a copy of your passport to rebecca@getkinosol.com
☐ Consult with a travel doctor about receiving all required vaccinations
☐ Obtain travel insurance
☐ Notify Rebecca regarding any dietary restrictions or medical conditions
☐ Virtually attend the pre-departure meeting at 9am on November 30

MEALS

• Attendance is mandatory for all group meals with activities.
• Group meal expenses are covered by KinoSol.
• Food at airports will be paid for out-of-pocket by travelers.

PACKING

• Casual attire (attire that you are comfortable in) is appropriate during the trip. This includes jeans, sneakers, etc. Wear what makes you comfortable and happy, but is culturally appropriate. Spaghetti straps, short shorts, mini skirts, and crop tops will not be acceptable.
Packing (Continued)

- Please note that you will be outdoors for much of the trip, so dress accordingly.
- Suggested packing list: https://vivafricanatours.com/tanzania-packing-list/
- Bring $100-$200USD of spending money (currency exchange will occur in Tanzania), as well as $100 for your Tanzanian visa.
- Pack all of your items in a carry-on and personal item.

Weather Conditions

- Tanzania's January Average High Temperature: 82 degrees F
- Tanzania's January Average Low Temperature: 62 degrees F
- Packing layers is always wise in the event that it is hotter or colder than you expect it to be.

Health and Safety

Before You Go

- Leave a copy of your itinerary, as well as the telephone numbers of your hotels with close family or friends and at work so that you can be contacted in the case of an important event.
- Be sure to bring a printed copy of your travel insurance, as well as a copy of your visa. ( Obtain travel insurance at: https://www.culturalinsurance.com)
- Schedule an appointment with a travel doctor to receive all vaccinations necessary for travel to Tanzania. Here are the CDC’s recommendations: https://wwwnc.cdc.gov/travel/destinations/traveler/no ne/tanzania?s_cid=ncezid-dgmq-travel-single-001
HEALTH AND SAFETY (CONTINUED)

Wellness
• If at any time you are not feeling well or experiencing a medical issue, please let a KinoSol team member know so that we can help remedy the situation.

Travel Tips
• During the trip, keep any valuables in your carry-on.
• If you require medications, keep them in your carry-on (in their original bottles) and bring a copy of prescriptions with you as well as generic alternatives.

Jet Lag
• Traveling through a varied number of time zones can lead to fatigue and irritability. The best ways to fight the symptoms of jet lag are to sleep during normal sleeping hours in your new location and wake during normal waking hours as soon into the trip as possible.
• Resist the urge to nap upon arrival and attempt to acclimate to the new time zone. Many people also find that drinking water and exercising can help restore the body to a natural state.

• Safety
• Be aware of your surroundings.
• Go out in groups, and do not get separated.
• Never display large quantities of money. Take with you only necessary cash and in smaller bills.

KINOSOL CONTACTS
Mikayla Sullivan | mikayla@getkinosol.com | (515) 290-0236
Rebecca Lyons | rebecca@getkinosol.com | (563) 320-9420
APPENDIX C

Video: How to Build a KinoSol Orenda

https://drive.google.com/file/d/1N66Qnt4m28OytxjEtuSL7w-bXblj4yKo/view?usp=sharing
COMMON QUESTIONS FROM FARMERS

Community Introduction Training Guide

WWW.GETKINOSOL.COM | #SAVETHETHIRD
A community training session should be conducted after identifying key stakeholders within the community, and members who will use the Orenda dehydrators. The training session should include no more than 15 members, and should cover unit assembly, best practices, and benefits of dehydration. Once these key community members are trained, they can continue to train others within their communities.
1. UNIT ASSEMBLY

Unit assembly instructions are provided in the guide included with the unit, but are also outlined below. It is important that you yourself know how to assemble the unit and can go step-by-step for the community members. Proceed to let them assemble the units on their own, or in groups, so they have a firm understanding of how to assemble the unit.

RECOMMENDATION:
First demonstrate how to assemble the unit in front of the entire group. Then break the group up into smaller groups of 3-5 people, and allow them to assemble the units as groups, as you walk around and assist. Creating an entertaining and competitive atmosphere has shown success in exciting community members.
UNIT ASSEMBLY (CONTINUED)

**Step 1**
Remove paper on both sides of the Plastic Sheet.

**Step 2**
Bend Plastic Sheet into a cylinder shape. Overlay and connect hooks into each hole. *Hook latches on inside of the cylinder*

**Step 3**
Insert a PVC pipe into the base. Attach and stack all pipes and trays.

**Step 4**
Attach lid to top of cylinder and place cylinder over trays and into base.
2. BEST PRACTICES

For this step, slice fruits and/or vegetables, and proceed to place them on the trays, and then set the unit in the sun to demonstrate how to use the dehydrator.

KEY ITEMS TO DEMONSTRATE:

- Ensure that you point out the correct size to slice fruits and vegetables (show the sizing box on the guide included with each unit). Sliced fruits and vegetables should not exceed the width of your pinky finger.
- Units need to be placed in the sun, not the shade.
- If it is windy outside, a rock can be placed in the bottom of the unit for stability.
- Demonstrate how to use the mylar bags. Air should be removed from the bag before sealing shut for optimal storage.

KEY POINTS TO CONVEY:

- Food should be thinly sliced (no larger than someone’s pinky finger)
- Place unit inside if it rains; once the rain ends, set it back outside.
- It takes 1-2 days for foods to be fully dehydrated (use condensation and break method as tests for fully dehydrated products—explained in the Common Questions section)
- The mylar bags are essential for properly storing outputs
BEST PRACTICES (CONTINUED)

FOOD PREPARATION:

- Hands should be washed with soap and water, prior to handling and slicing food to place in the unit
- Knife used for slicing food should also be washed with soap and water, prior to use and after use
- If fruits or vegetables are washed, they need to be dried with a cloth, prior to slicing and being placed in the dehydrator
- Insects and grains do not need to be sliced
- Food should not overlap on the trays
- Fruit with skin (apples, mangoes) does not need to be peeled, prior to slicing

STORAGE:

- Mylar bags are zip-lock and heat sealable; they are reusable
- Food can be stored for 6 months post-dehydration.
- It is best to store the same types of food in the same bags
- Mylar bags should be stored inside of the house

CLEANING:

- The unit requires minimal cleaning. Dried foods should be easily removable from the trays, leaving minimal residue.
- If cleaning is needed, use soap and water to clean each of the trays. Allow to dry before using again.
- Mylar bags can also be cleaned with soap and water.
3. KEY BENEFITS OF DEHYDRATION

THE KEY MESSAGES TO CONVEY:

- Having access to fruits and vegetables during off or dry seasons
- Nutrients and vitamins are retained during the dehydration process
- Dried products can be sold at markets for higher prices than raw produce
4. COMMON QUESTIONS

What’s included when I buy a KinoSol Orenda?
1 complete dehydrator unit (4 trays, 4 PVC pipes, 1 base, 1 lid, 1 plastic sheet), and 4 mylar bags.

How long will food that has been dehydrated in a KinoSol Orenda stay fresh?
Using the mylar bags, the shelf-life is six months, if properly dehydrated and stored in a safe, dry environment.

What if it rains while I am dehydrating something in my KinoSol Orenda Unit?
Dehydration should not occur if it is a rainy day. Dehydration should take place outside, in direct sunlight. If you begin dehydrating in the morning while it is sunny, and it starts to rain, bring the unit inside. Place the unit back outside in the sun, once the rain has stopped.

How do I know my foods are done dehydrating?
You can tell foods are done dehydrating when you are able to bend the food in half and it breaks. During the dehydration process, condensation (water droplets) occurs on the lid and clear plastic of the unit. Once all the condensation has disappeared and the lid and plastic are clear, that is a common sign that the food products are dehydrated.

What are the benefits of this product?
The unit requires only the sun’s energy for use. It preserves nearly 100% of inputs. It is durable and requires no tools for assembly.

How should I check on the KinoSol Orenda Unit while it’s dehydrating?
You should not remove the lid during the dehydration process. Heat will escape and extend the drying time. Please wait until the condensation has disappeared from the lid and plastic, and they are clear. Then you can remove the lid and test that the food products are fully dehydrated.
5. ADDITIONAL TIPS FOR FARMERS

COMMONLY DEHYDRATED FOODS

- APPLE
- MANGO
- STARFRUIT
- PLANTAIN
- PAPAYA
- COFFEE BEANS
- CORN
- KALE
- BANANA
- TOMATO
- FISH
## APPENDIX E

<table>
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<tr>
<th>Day</th>
<th>Time</th>
<th>Activity</th>
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Rebecca Lyons <rebecca@getkinosol.com> to Alexandre, Clayton, Mikayla

Hello Alex,

With 47 days until our departure to Tanzania, we will now be sending you weekly email trip updates. This is in an effort to avoid bombarding you with lots of different email chains throughout the week, and instead, this will help us to have the clearest level of communication possible. Feel free to "reply all" to this email chain with any questions from here on out.

Here is your first weekly update:

**Community Introduction Training**
We will be having our Community Introduction Training on November 30, 2018 from 9:00-10:30am CST. Attached you will find the training guide. We want your feedback! Is this document clear? Are we missing anything? We will address your questions during the training on 11/30. We will be sending a Google Calendar reminder about this meeting soon.

**Travel Insurance**
Once you have obtained travel insurance from [https://www.culturalinsurance.com/](https://www.culturalinsurance.com/), please "reply all" with a copy. Thank you!

**Airline Tickets**
I have attached both the international and domestic (Tanzanian) airline tickets to this email.
Your booking reference number for the international flight is SGHJYX.
Your booking reference number for the domestic flight is 1F2C7K.

Have a happy Thanksgiving,
Rebecca
Hello Ben & Denise,

I hope that you had a happy time welcoming the new year.

We are now 2 days out from our Tanzania trip! I'm getting very excited, and I hope you are too! I know that we will have a great experience, make an impact, and learn lots.

Here is your (last!) official weekly update:

Last Minute Reminders

- **Embassy Registration:** Hopefully by now you have registered with the embassy, but if not, please do so before we leave. Here is the link that will allow you to do so: [https://step.state.gov/step/](https://step.state.gov/step/). The address you should use is the first location where we will be staying: Lesa Garden Hotel | Nyegezi, Mwanza Tanzania P.O. Box 2501.
- **Malaria Medication:** Please make sure you have your malaria medication ready for travel. (I took my first dose today, so make sure that if you are supposed to take your prescription ahead of departure, do so.)

Packing Notes

- **Travel Adapter:** Remember to bring your travel adapter. I have attached a photo of the one Mikayla has been using.
- **Sun Protection:** Please be sure to pack a hat, sunscreen, and sunglasses to maximize your sun safety.
- **Flashlight & Batteries:** Be sure to pack a flashlight with extra batteries, in case of power outages.
- **Luggage:** For some flights, your carry-on bag may get checked. Therefore, be sure to have a personal item that you can put any valuables in to keep with you if your carry-on ends up getting checked. Your personal item should not exceed 10 pounds. (For example, I am packing a carry-on sized suitcase that could be checked for a flight. I will also have a small backpack (less than 10 pounds) that I will keep my wallet and phone in.)
- **Passport Copies:** Please bring 2 printed copies of each of your passports.

Airport

- Alex and I will be arriving to O'Hare in Chicago at 7:00pm on Sunday night. We will plan on meeting you at the gate after we go through security. It will be so nice to finally meet you.

Let me know if you have any questions as you make final preparations for the trip.

See you soon,
Rebecca
APPENDIX G

Trip Participant Interviews Video Compilation

https://www.wvide.com/view/1360281061
KinoSol's Tanzania Post-Trip Survey

Thank you for coming to Tanzania with KinoSol. Please answer these questions about your experience so that we can best serve our future travelers.

1. My expectations for the trip were...
   Mark only one oval.
   □ Unmet
   □ Met
   □ Exceeded

2. Please explain:
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

3. Before going on this trip, I wish I had known...
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

Superlatives

4. The most frustrating part of the trip was...
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
5. My favorite part of the trip was...

________________________________________________________________________

________________________________________________________________________

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Structure of the Itinerary

6. Mark only one oval.
   - The trip was the perfect balance of scheduled activities and unstructured free time.
   - I wish there were more free time.
   - I wish there were more scheduled, structured activities.

7. Additional comments on the structure of the itinerary:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Activities

8. Which of the following activities would you recommend including again for future trips?
   Check all that apply.
   - Free time in Mwanza
   - Community introductions
   - Visit to a school
   - Safari in Serengeti
   - Ferry ride
   - Ngorongoro Crater exploration
   - Coffee tour
   - Waterfall exploration
   - Free time in Moshi
9. Were there other activities you wish had been included? Please explain:


Community Introductions

10. Level of Participation
    Mark only one oval.
    □ I was too involved in the community introductions.
    □ The extent to which I was involved in the community introductions was just right.
    □ I would have liked to be more involved in the community introductions.

11. What went well in regards to the community introductions?


12. What could have gone better in regard to the community introductions?


Accommodations & Meals

13. How did the accommodations align with your expectations?
    Mark only one oval.
    □ Unmet
    □ Met
    □ Exceeded
14. Additional comments on accommodations:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

15. How did the meals align with your expectations?
   Mark only one oval.
   ○ Unmet
   ○ Met
   ○ Exceeded

16. Additional comments on meals:

________________________________________________________________________
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Leadership

17. Please rank the organizational level of the KinoSol team.
   Mark only one oval.
   ○ Disorganized
   ○ Moderately organized
   ○ Very organized

18. Please explain:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
19. Did you find the weekly pre-departure update emails to be helpful?
   *Mark only one oval.*
   - Yes
   - No

20. What would have made the weekly pre-departure update emails more helpful?

   __________________________________________
   __________________________________________

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Final Thoughts

21. Would you join the KinoSol team on a future trip?
   *Mark only one oval.*
   - Yes
   - No

22. Please explain:

   __________________________________________
   __________________________________________

   __________________________________________

   __________________________________________

   __________________________________________

   __________________________________________

   __________________________________________

   __________________________________________

   __________________________________________

   __________________________________________

23. Could the KinoSol team have done more at any stage to improve the quality of your trip experience?
24. Additional Comments & Feedback:

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

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REFERENCES


