# Haines Pop-Open Solar Oven Seven-Day Focus Group Workshop

September 19 – 25, 2022 St Joseph Church in Eldoret, Kenya

Report Prepared by Solar Education Project For Roger Haines, Haines Solar Cookers, LLC San Diego Rotary Club Solar Household Energy

Saturday, October 29, 2022

## PARTNERS



Haines Solar Cookers LLC is a company based in San Diego, California founded by Roger Haines. The Haines cooker is a popular solar oven product and is rated highly by customers. Roger Haines has been involved in manufacturing his solar cookers since 2013 and has been on a mission to improve lives around the world through the benefits of solar cooking. Haines 1 Solar Cookers are widely used in Oaxaca Mexico where activists promote their use through demonstration and education. Roger Haines has also introduced the ovens during large demonstrations in both Kenya and Uganda.



Solar Education Project (SEP) is a project of the non-profit Global Development Solutions based in Ohio, USA. The project was co-founded in 2016 by Jennifer Gasser and Mary Buchenic. Their focus is education related to solar and retained heat cooking. SEP has been active providing STEM related solar cooking learning opportunities to schools, science centers, and other organizations. Along with their Kenyan colleague, Grace Chepkemei, they work to educate others in solar and retained heat cooking solutions to benefit people and the ecosystems in which we all live.



St Joseph Church is as small Catholic church under the St John the 23<sup>rd</sup> Catholic Diocese in Eldoret. St. John the 23<sup>rd</sup> has 48 small church communities. St Joseph Church serves residents mainly residing in a slum estate called Kipkaren within Eldoret. The parish priest is Father Sospeter. He is fully invested in the retained heat and solar cooking initiatives and supports the efforts to educate church members. He has even displayed the baskets and ovens on the altar during mass and allowed the group to speak to the congregation about their efforts. Father believes solar cooking can improve food security, help save money, and lead to the protection of Mother Earth.



Rotary Club of San Diego, California is one of the oldest Rotary Clubs in the country. It was founded in 1911 under the leadership of its first president, Carl Heilbron. It has remained an active club involved in many important and impactful local and international projects. The club has received international recognition for its work. Roger Haines is a member of the Rotary Club of San Diego.



Solar Household Energy is a non-profit that has worked with governments, non-governmental organizations and the private sector to promote solar cooking as part of an integrated approach to cooking. Since 1998 they have worked to unleash the potential of solar cooking to improve social, economic and environmental conditions in sun-rich areas around the world.

## BACKGROUND

SEP was asked by Roger Haines to provide workshop curriculum for two ten-day Haines Pop-Open Solar Oven Workshops, one in Kakuma Refugee Camp (May 23 – June 1, 2022) and the other in Dadaab Refugee Camp (June 13 – 23, 2022). In addition, SEP oversaw the efforts at Kakuma. They enlisted their colleagues, Grace Chepkemei and Camily Wedende of Eldoret, to provide instruction in retained heat basket cooking and Haines Pop-Open Oven cooking respectively.

When the opportunity to conduct a third Haines Pop-Open Workshop presented itself, SEP suggested holding it in Eldoret at the St Joseph Church where Grace Chepkemei is a member. Grace is highly respected and active in the church. She has demonstrated solar and retained heat cooking for members of St Joseph at the church, in her home, and at the shop of her friend and fellow Rotarian, Camily Wedende, also of Eldoret. These demonstrations generated much interest and enthusiasm among members of the congregation. To support that interest, a three-day Retained Heat Cooking Workshop was organized with SEP and funded by Rotary Club of Warren, Ohio. It was held May 17 – 19, 2022 on the church grounds.

Conducting the third Haines Pop-Open Workshop in Eldoret at the same location with the same group of participants was a logical extension of the efforts underway to educate the community about retained heat and solar cooking. Roger Haines agreed and planning for the seven-day workshop began.

## **GOALS OF THE WORKSHOP**

## "Begin with the end in mind." Steven R. Covey.

Knowing the goals and desired outcomes of the vested partners was an important first step in planning the workshop. There were many shared goals but also some specific to each organization. Understanding outcomes anticipated by each stakeholder helped guide the process by which the workshop was conducted. The following goals were listed:

- Introduce the Haines Pop-Open Solar Cooker to participants as a clean and fuel free option for cooking.
- Provide opportunities for participants to cook various local foods with Haines Pop-Open Solar Cooker.
- Provide instruction using SEP workshop curriculum in the following areas: science of solar cooking, global connections, health and wellness, food and cooking traditions, sustainable development goals, integrated cooking, and application to daily life.
- Solicit participant feedback to evaluate use of the Haines Pop-Open solar oven and to assess its adoption.
- Solicit participant feedback to evaluate use of the SEP curriculum and to assess its impact.
- Reduce the amount of fuel purchased for cooking thereby saving money.
- Reduce the amount of exposure to indoor smoke, thereby reducing harmful health effects.
- Explore opportunities for participants to use the ovens for business ventures.
- Expand training to additional church and community members using participants trained in both the threeday and seven-day workshops.

## PREPARATION

The scope and sequence of instruction were determined through regular communication and planning. The SEP workshop curriculum - workbook and an instructor's manual content - was donated for the project. Each participant was to receive a hard copy of the workbook. Instructors were to use the instructor's manual.

Grace Chepkemei was selected to manage the workshop. She gathered a Steering Committee of volunteers from the church who had also helped organize and run the Retained Heat Cooking Workshop. The group was tasked with creating a template for the new Pop-Open design, provided by Roger Haines, and using that template to make twenty ovens. They also had to find local sources for the pots and lids to be used with the Haines oven. They purchased sufurias and found clear glass lids that fit securely. All items were purchased locally. The exteriors of the sufurias were painted matte black using a high heat paint.



Six Zoom meetings were held among partners in the US and Kenya. Planning and preparation included discussion of goals and how best to accomplish them, roles and responsibilities, translation of the workbook from English to Swahili, and budget allowance. In one of the Zoom meetings, the Steering Committee consulted with Roger Haines regarding the proper construction of the Pop-Open design.

SEP worked closely with four members of the Steering Committee to accurately translate the participant workbook from English to Swahili.





## FOCUS GROUP WORKSHOP PARTICIPANTS

Twenty people participated in the Haines Pop-Open Solar Cooker Focus Group - fourteen females and six males. All participants were members of St Joseph Church in Eldoret and previously participated in the three-day Retained Heat Basket Making Workshop sponsored by Rotary Club of Warren, Ohio.

## TRADITIONAL COOKING METHODS

The main cooking fuels for fifteen of the twenty members of the group are charcoal and firewood. Purchasing these fuels is a challenge. Often wood and charcoal must be bought from people bringing them illegally from the forest. Kerosene is also commonly used as it can be purchased in very small quantities. Kerosene however does not suffice for all cooking needs. Wood and charcoal remain the go-to fuels. Five participants routinely use Liquefied Petroleum Gas (LPG).

All cooking fuels have steadily increased in price. LPG prices have increased "drastically" since the beginning of 2022. Even those who cook with LPG are finding it more difficult to afford.

The concept of integrated cooking (using solar and retained heat cookers to supplement other cooking fuels) is a concept that was readily understood. Many participants already use multiple fuel sources. Solar energy, introduced as a free and clean fuel source to be used whenever possible, fits into an already existing mindset when presented in this manner.

## THE WORKSHOP

The workshop ran from Monday, September 19<sup>th</sup> through Sunday, September 25<sup>th</sup>. The workshop was postponed twice because of cloudy and rainy weather. The group was fortunate that this week presented many sunny opportunities for successful solar cooking. Daily attendance and weather are listed in the chart.

	September 19	September 20	September 21	September 22	September 23	September 24	September 25
Attendance	20	15	17	17	17	17	20
	Sunny	Sunny	Sunny	Sunny 21C	Sunny 22C	Sunny	Sunny 23C
Weather	No rain	Passing					
	No wind	Clouds					

Food was purchased from local markets. Each participant cooked a variety of foods over the seven-day period.

Grace reported the following: Each day started with excitement where each participant prepared what they were going to cook, and various types of food were cooked and baked on a daily basis to the end of the workshop.

## Foods Cooked Bread and cakes were baked daily for the next day's breakfast and teatime.

Githeri (beans and maize)	White rice	Bread
Cabbage	Rice pilau	Cake
Cultural vegetables	Managu	Scones
Peas	Ugali	Eggs
Carrots	Sukuma wiki	Bananas
French beans	Tomatoes	Supa Kanja
Potatoes	Beef	Water for Tea

Photos of food from the market being prepared, cooked, and shared.



#### Workshop Curriculum

Gaining acceptance of a new method of cooking can be difficult. When the method relies completely on sunshine, acceptance can be hindered by uncertainty and a lack of understanding of the power of sunlight. The content lessons, global connections and group discussions develop confidence, problem solving skills, a sense of a local and global community, and a science-based understanding of solar thermal energy. This, along with daily cooking experiences, forms the basis for understanding, accepting, and adopting solar and retained heat cooking methods.

Grace reports, "The curriculum was followed, and all the sessions were taught as per the workbook and instructors manual for the seven-day period. Every session was well covered. Global connections and discussions were the climax of every session. Participants found it very interesting, exciting and a fun moment for all."

Instructors used the SEP Workshop manual to guide lessons each day while the food was cooking in the solar ovens. The Scope and Sequence Chart gives a brief overview. Participant workbooks were in Swahili.

#### Scope and Sequence Curriculum for Solar Cooking Workshop

Discover the benefits of solar cooking and embrace it as a routine part of your life.

	A SOLAR COOKING Recipes are suggestions only.	<b>B</b> CONTENT LESSONS	C GLOBAL CONNECTIONS and GROUP DISCUSSIONS
	PREP & SETUP: Learn recipe and method adaptations for solar cooking. Master proper use of the solar oven for cooking. Understand safety in solar cooking. EATING: Taste and evaluate results. CLEAN UP: Discuss care and cleaning of solar ovens and cookware. Everyone helps!	Focus on key science topics related to solar energy, the science of solar cooking, health, home economics, and how solar cookers can be a solution around the world. Designed to instill confidence in solar cooking technology and increase the likelihood of adoption.	Learn from others around the globe who are involved in the Solar Cooking movement. Connect the solar cooking theme in ways that are important to the group. Always end the discussion with the question – How can this discussion lead to action?
1	PREP & SETUP: Introduction to Solar Cooking & Haines 1 Assembly; Features of the Haines 1 Cake Prepared ahead of time by instructor EATING: Discuss and evaluate results. CLEAN UP: Discuss care and cleaning	BASELINE SURVEY, SAFETY TIPS AND DARE Introduce DARE – direct, absorb, retain, eat. Safety with solar cooking. ACTIVITY: Concentrated Light of Magnifying Lens	GLOBAL CONNECTIONS Meet solar cook and entrepreneur, Roger Haines from United States. GROUP DISCUSSION: SCI Baseline Survey. Explain and guide participants to fill it out. Have examples of 1kg of firewood and charcoal and a 6kg container of LPG.
2	PREP & SETUP: Bread Compare traditional vs solar. Share Guidelines and Solar Cooking Tips WS EATING: Share food, discuss, evaluate. CLEAN UP: Discuss care and cleaning	THE AMAZING SUN, HISTORY OF SOLAR COOKING Tremendous power and potential of solar energy. History of solar cooking dating back 250+ years. ACTIVITY: Use oven panels to reflect light. ACTIVITY: Concentrated light as art tool.	GLOBAL CONNECTIONS: Meet solar cook and engineering professor, Celestino Cruivo from Portugal. GROUP DISCUSSION: What do you hope to learn in this workshop? How can solar cooking be empowering? What will challenges be?
3	PREP & SETUP: Sukuma Wiki & Ugali (Eggs in communal oven.) Compare traditional vs solar. EATING: Share food, discuss, evaluate. CLEAN UP: Discuss care and cleaning	LATITUDE AND LONGITUDE, SEASONS AND WEATHER, SHADOWS Latitude affects solar cooking. Daily weather conditions affect solar cooking. ACTIVITY: Finding Places on a Map ACTIVITY: Measure length of your shadow.	GLOBAL CONNECTIONS: Meet solar cook and blogger, Sarah Hjalmarsson from Sweden. GROUP DISCUSSION: How can your group turn this cooking experience into a cooking show. Could videos be made and shared on YouTube? Make a plan.
4	PREP & SETUP: Sweet Potatoes & Green Grams Compare traditional vs solar. EATING: Share food, discuss, evaluate. CLEAN UP: Discuss care and cleaning	MICROBES, PASTEURIZATION AND THE WAPI Microbes and waterborne illnesses. Using the WAPI with solar cookers. ACTIVITY: Demonstrate use of WAPI in solar heated water.	GLOBAL CONNECTIONS: Meet solar cook and advocate, Elie Joseph from Haiti. GROUP DISCUSSION: Expand the discussion about clean cooking and clean water to other aspects of daily life. Optional: Make a poster to encourage clean habits in homes and communities.

## Scope and Sequence Curriculum for Solar Cooking Workshop

Discover the benefits of solar cooking and embrace it as a routine part of your life.

	A SOLAR COOKING Recipes are suggestions only.	<b>B</b> CONTENT LESSONS	C GLOBAL CONNECTIONS and GROUP DISCUSSIONS
5	PREP & SETUP: Githeri With Potatoes And Carrots Compare traditional vs solar. EATING: Share food, discuss, evaluate. CLEAN UP: Discuss care and cleaning	SUSTAINABLE DEVELOPMENT GOALS Taking ownership of the Sustainable Development Goals. ACTIVITY: Citizen's checklist	GLOBAL CONNECTIONS: Meet solar cook, solar dryer and solar engineer, Juana Jarquin from Mexico GROUP DISCUSSION: What else can solar cookers be used for? Discuss how foods might be dried. Discuss benefits.
6	PREP & SETUP: Rice, Beans and Cabbage Compare traditional vs solar. EATING: Share food, discuss, evaluate. CLEAN UP: Discuss care and cleaning	HEALTH AND OPEN FIRE COOKING, CARBON MONOXIDE, EYES AND BURNS Learn about issues related to daily open fire cooking.	GLOBAL CONNECTIONS: Meet solar cook and videographer, Luther Krueger, from United States GROUP DISCUSSION: Create a song about solar cooking and DARE. Perform it for the larger group.
7	PREP & SETUP: Ugali and Beef Stew, Cake (2) Compare traditional vs solar. Invite a Friend Day. Introduce guests. Participants become the instructors. Share knowledge and solar cooking skills with guests. EATING: Practice your artistic plating skills. CLEAN UP: Discuss care and cleaning	COOKING TRADITIONS, COOKING FUELS AND INTEGRATED COOKING Varied cooking methods and traditions developed over time based on geography and climate. Integrated cooking techniques can save fuel and money and reduce exposure to daily open fire and smoke.	GLOBAL CONNECTIONS: Meet solar cook and inventor, Matteo Muccioli, from Italy. GROUP DISCUSSION: Can solar and retained heat cooking provide a business opportunity. Discuss options such as selling cakes, selling ovens, teaching about solar and retained heat cooking, etc.
8	PREP & SETUP: Rice and Green Grams Compare traditional vs solar. EATING: Share food, discuss, evaluate. CLEAN UP: Discuss care and cleaning	PLATING TECHNIQUES Explore the artistry of culinary plating techniques. Learn about making food attractive for work in restaurant business. ACTIVITY: Draw common foods as they could be artistically plated.	GLOBAL CONNECTIONS: Meet solar cook and oven inventor, Alain Bivas from France. GROUP DISCUSSION: Collaborate to prepare short presentations to express what you have learned.

Steering Committee members coordinated with the Project Manager, Grace Chepkemei, to take on various leadership roles throughout the workshop. Colleague, Camily Wedende, served as an instructor along with Grace and the members of the committee. Days began with prayer and song. Sharing the food was a joyous occasion.

A WhatsApp group was formed that included all the participants, the steering committee, instructors, SEP and Roger Haines. Throughout the workshop, pictures and videos were shared as well as commentary. The group will continue to function post-workshop to share cooking photos, answer questions, offer encouragement, and make future plans for sharing the group's new cooking skills.





Rhoda explanning solar cookers n fireless baskets can be turn into business n training centre for solar cooking foods, be baking or coo n drying.



Grace expounding that St Joseph can start drying foods when its raining seasons cause its being produced in large amounts n sale during dry season in the months of Nov to march.







Cabbages, sukuma wilki, potatoes pasta being prepared today to be cooked in Haines Pop open cooker. 2:33 AM



Grace reported that the group enjoyed learning about other people around the world who solar cook. One of particular interest was Juana from Mexico who specializes in solar drying of regional foods and spices. The entire group expressed interest in this aspect of using solar thermal energy to process foods.



#### SESSION THREE

MAHUSIANO YA KIMATAIFA Ni Wapi Duniani?

Kutana na Sara mwanamke kutoka Uswidi - Mpishiwa Solar, Blogu na Mwekezaji

Sara ni mpishi wa sola, mwana blogu, na mjasiri amali anayeishi Uswidi. Uswidi iko kaskazini mwa Ulaya kwenye Peninsula ya Scandinavia. Sehemu ya Uswidii kondaniya Arctic Circle.

Biogu ya Sara inakuzzana kuelimisha kuhusu kupikia kwa kutumia nishati kwa uendelevu, uthabit, na kuishi nje ya gridi ya tafa. Duka lake la mandao ni huusu bidhaa kwa mitho wa maisha usio na gridi na nishati. Kupika kwa kutumia jua nikipengele kimoja tu cha mtindo wa maisha ya Sara hataliwa huko fizazi. Sara hataliwa huko fizazi. Sara bataliwa huko fizazi.



Education Project

Sarah alizaliwa huko Brazil, alilelewa Italia na Uswidi, na akasoma Australia. Uzoefu huu ulimpa mitazamo ya kitamaduni tangu umri mdogo. Unawezaje kushiniki utamaduni wako na



mättatzo ya ubunitu. Sara alikutana na upishi wa jua katila majanda ya sayasmi na vipindi vya televisheni. Alifkiri liionekana kuwa ruzri, kalini miaka liipita kaba ya kujaribu mwenyee. Mwanzoni, Sara alijantuk kutengeneza tanuri za kujitengenezea jua lakini hivi karibuni aliamu kwamba, kovake, lakawa bora kumuua tanuri liiyotengenezwa kitaalamu. kwa hiyo, alianza kuyika kwa kutumis jua kila siku kwa mafanika makubuta Sara alienda kujaka tangu akina mdogo, kila mara akijipa changamoto kujaribu mambo mapya. Lipitaji wa jua runifara makero hayoi Kodri aliyor pika, nefvyan alivotaka wengine pia kujaka kuhus vihio. Aliana kushiridi mtandaoni na kuanzisha kituo chake cha YouTube.

Kupiko kwa kutumia jua kwenye laittude ya 50° Kaskazini ne jua chini angani huleta changamoto fulani. Sara hutumia vijiko vinavyo fao vilivopengwa kikamilifu ilikuunda mapishi tamu kama vile mate wa unga, visu' vitamu, ngi m kukanga kijiti vya bata mzinga, dengu zilizo pikwa pole pole na pizza za kupendeza!

Sara anasema, "Kupika kwa kutumia jua kume ni saldia kukuza hisia ya kupika kwa mdundona salil. Kama vile unavyofifunza kufanya kari na maumbile, badata ya kupingana nayo, unapofifunza kupafi hwa meli, kupika kwa jua kupi meraifundha kufahamu suati ya ani ya ulimwenyu unao nizungiua. Jimeathiri uchaguzi wangu wa mahali pa kuhamia na jinsi ninavyopanga siku zangu – hawa katika misinu wa joto.

Utafiti zaidi kuhusu hali ya hewa ya Uswidi. Ni mara ngapi unaweza kupika kwa jua huko Uswidi? 17 <image>

## **SPECIAL GUESTS**

The workshop hosted three special guests throughout the seven days. From participants' comments, these guests added value to the event, and their encouragement was important.

Grace reports: "Stephen Ngobia, President of Rotary Club of Eldoret Uasin Gishu, graced the occasion by being the Chief Guest of day to open the workshop."



"We had two Professors from Moi University who came to view how Solar cooking is done and they were amazed at what they saw and tasted food cooked by the Haines Solar Cooker and the fireless baskets. They emphasized that this would be a great business opportunity and that we would partner with their business department so that we can share ideas."



## **GRADUATION CELEBRATION**

Grace reports, "This was a very exciting day for the participants, Graduation was done on Sunday in Church after our main mass. All participants cooked various foods and baked bread and cakes in front of the church and so many parishioners viewed and tested the food. They were amazed at the wonders of the sun and the Haines cooker. Many insisted that they too should be trained on solar cooking. We are happy that we now have 20 trainers who can go to different places to train. Guest of the day was businessman, George Kibet, who is also a church member who presented certificates to the participants. I must mention that Fr Sospeter played a great role in all we were doing and would never thank him enough. The participants composed a song on Solar Cooking and sang it to the Congregation with Camily playing a guitar."

## Solar Cooking Song

Wana Yusuf Ohee x5 Wana Yusufu twajifunia siku ya leo Twajifunia siri ya kipikia kwa jua Hongera Roger oihee x5 Hongera Mary oihee x5 Na Jennifer Oihee x5 Kwa kukugundua jinzi ya kupikia Jua x2 Walimu Wetu Oihee x 5 Na Father Sosi x5 Camily wetu Na Gracie wetu Kwa kutufunza jinzi ya pikia jua

Kanisa Letu Oihee x5 Wageni wetu Oihee x5 Mwakabishwa Oihee x5 Mujifunze jinzi ya kipikia kwa Jua x2









## **QUESTIONS TO PARTICIPANTS**

#### What did you learn from your solar cooking experience?

- 1. The sun has been there for so long and never knew of using it to cook.
- 2. What I did not know was that, the sun we use for light basking, drying cereals, cloths can be used for cooking using solar cookers. That was very wonderful.
- 3. Learnt more about solar cooking whereby the sun is trapped and food is cooked using Haines 1 solar cooker.
- 4. Learned how to make the pop open 1 Haines cooker.
- 5. Amazing sun that can cook food n boil drinking water
- 6. Sun is free source of energy
- 7. Using solar Cooking can solve 60% of my cooking.
- 8. I learnt that most foods can be cooked using solar cookers eg, vegetables, ugali, rice, meat, bread, cake, spaghetti and pea nuts in a span of one hour 45 minutes to three hours.
- 9. Food cooked using solar are tastier and safe
- 10. Haines cookers is a tool used to trap sun to do cooking n baking.
- 11. Various types of solar cooking products eg cookit, parabolic, solar drying products.
- 12. When its raining we cannot cook using solar cooker.
- 13. When it's windy the solar cooker takes long time to cook food.
- 14. Solar is using free sources of sun to cook, dry food, boil drinking wate (w.a.p.i.)
- 15. How to cook varieties of food using the haines 1 cooker
- 16. Solar cooker can boil water till its safe to drink
- 17. It only works when the sun shines
- 18. It can never be a stand-alone technology
- 19. Solar can boil water, tea and milk
- 20. Solar can bake Bread, cakes and biscuits
- 21. When its cloudy we cannot cook with solar.
- 22. Solar cookers can do baking.
- 23. The sun can pasteurize water to be safe for drinking
- 24. We are grateful for the shared knowledge, ideas, support of materials n training of the first training about fireless basket n the second training of Haines pop one cooker

#### What did you learn from the curriculum sessions?

- 1. Learnt about solar ovens
- 2. Importance of longitudes and latitudes
- 3. History of Solar cooking
- 4. I learnt about the great man/(Haines) for inventing the Haines Cookers
- 5. Connecting with people who have great experience in solar cooking.
- 6. When there is no sunlight solar cookers cannot be used.
- 7. Solar cooking is environmentally friendly since it does not have pollution
- 8. Solar cooking is safe and saves resources.
- 9. A Solar cooker uses direct energy from direct sunlight (DARE) to cook.
- 10. Sustainable development goals and integrated solar cooking.
- 11. Meeting Solar cooks on the globe like Juana from Mexico.
- 12. Utilisation of free source of energy thus preventing environment using the sun.
- 13. Cutting the cost of using other sources of energy/fuels.
- 14. Integration of solar Haines cooker with the fireless baskets.
- 15. Solar cookers can be turned into business project in our small Christian community thus earning a living.
- 16. The benefits of drying food are it can be durable. It can stay for a long time.
- 17. Importance of longitudes and latitudes
- 18. How Sarah cooked and shared on YouTube.
- 19. Learned how latitude and longitude affect seasons, day/ night
- 20. The sustainable development goals are very interesting and important.

- 21. Wonders of the sun that can be used to cook food. How the sun is connected to shadows and how it affects cooking with solar cookers
- 22. I didn't know cooking can be done using sunlight and didn't know that solar cooking saves resources
- 23. First of all I learnt that the whole team was very concerned indeed and interested to know how to make Haines 1 Pop open Cooker and know how it can cook using the sun.
- 24. It was fantastic being taught much about solar cookers especially on renewable energy n cutting down the cost of living among our member n church as whole.

#### What were some achievements of the day?

- 1. Visitors from Moi (2 doctors) encouraged us.
- 2. We had two visitors who encouraged us and were amazed by solar cooker.
- 3. Rotarians and visitors from Moi University came. They shared how learning could (unreadable).
- 4. Received visitors from community. They tasted the food and were amazed at what the sun can do.
- 5. Found out Haines can cook ugali.
- 6. Participants actively discussed food culture in different communities.
- 7. The day was well spent. More discussions were healthy. Fruitful discussions and great ideas shared.
- 8. We had so many visitors who came and test food cooked in the Haines.

#### What were some challenges of the day?

- 1. The measurement of water
- 2. Balancing of water when cooking rice.
- 3. How to improve cooker to cook for big family.
- 4. Cannot cook at night.
- 5. Time
- 6. Cooking is only done on sunny day.
- 7. Did a cleanup of the compound that took longer than expected. But the food cooked during that time.

#### Comments about solar cooked food.

- 1. Ground nuts roasted and wow! it was so well roasted and very tasty better than any have ever tested roasted of fire.
- 2. The best so far actually we are lacking word to express coz most of us never knew to bake cakes but has from now onwards the group can bake the best of the best cakes. Same applys to bread.
- 3. It's like miracles to us seeing Haines baking bread.
- 4. Cabbage was good and tasty
- 5. Food cooked using solar are tastier and safe

## COOKING DATA FOLLOWING WORKSHOP

## Conditions not suitable for solar cooking

							-		_			
	Mon	Tue 9/27	Wed	Thur	Fri	Sat	Sun	Mon	Tue	Wed	Thur	Fri
	9/26		9/28	9/29	9/30	10/1	10/2	10/3	10/4	10/5	10/6	10/7
	Partly	Partly	Mostly	Cloudy	Partly	Mostly	Partly	Cloudy	Cloudy	Cloudy	Cloudy	Cloudy
	sunny	sunny	cloudy		sunny	cloudy	cloudy	Rain in	rain			Rain
							pm	pm				
Ag	managu	githeri										
Ca	cake											
Ра		Cake.										
		rice										
Su		cake,			bread							
		spaghetti										

## COOKING DATA FOLLOWING WORKSHOP

Conditions not suitable for solar cooking

	Sat	Sun	Mon	Tues	Wed	Thur	Fri	Sat	Sun	Mon	Tue
	10/8	10/9	10/10	10/11	10/12	10/13	10/14	10/15	10/16	10/17	10/18
	Clouds	Partly to	Sunny	Sunny	Sunny	Scattered	Passing	Cloudy	Sunny	Sunny	Sunny to
	w rain	mostly	am partly	am Partly	am to	clouds	clouds		am	am partly	partly
		cloudy	cloudy	cloudy	cloudy				Partly	cloudy	cloudy
			pm	pm	pm				sunny	pm	
									pm		
Ag											
Ca											
Ра											Peas,
											Sukuma
											wiki
Su					cake	peas					
Gr						cake					
Eu									Sukuma		
									wiki		
Vi									Black		
									night		
									shade,		
									Meat		

	Wed	Thur	Fri	Sat	Sun	Mon	Tues	Wed	Thur	Fri	Sat
	10/19	10/20	10/21	10/22	10/23	10/24	10/25	10/26	10/27	10/28	10/29
	Partly	Partly	Cloudy	Sunny to	Passing	Scattered	Scattered	Cloudy	Sunny to	Clouds	Rain
	sunny	sunny to		scattered	clouds	to passing	to passing		partly	Rain	
		scattered		clouds		clouds	clouds		sunny		
		clouds									
Agnes											
Catherine											
Patricia	cake										
Susan											
Grace											
Eustace									Pumpkin		
									and		
									githeri		
Viola											
Boniface		Rice and		Rice and							
		beans		beans							

## **RECOMMENDATIONS AND CONCLUSION**

This was an ambitious project. New ideas were tested, both with oven design and instructional approach. Partners worked closely together from many miles away. Everyone exhibited a willingness to communicate regularly in an honest and caring way; to be flexible, creative problems solvers; and to address challenges with patience and a forward-thinking mindset.

SEP continues to work on previously stated goals. Feedback and self-assessment are critical aspects of improvement.
Cultivate communication and reporting in key priority areas
Balance time, effort, and costs
Determine impact indicators
Assess trainee interest
Create materials in most useful language
Clearly identify action areas

Identification of impact indicators that can be clearly assessed in an uncomplicated manner continues to be a worthwhile goal. The process of collecting data can be refined through more carefully structured assessment tools. Clear communication on the importance of assessment tools is critical.

#### Additional goals include:

• Develop relationships with trainers to cultivate an environment of support • Reimagine cooking education in a way that is culturally responsive, renewable, sustainable and contributes to a healthy lifestyle • Promote solar cooking and integrated cooking solutions that use locally sourced materials and foods while supporting the local economy. Foster independence from cooking with charcoal and wood by using the sun's free, renewable energy to save cost and resources.

## The report closes with recommendations, conclusion, and thanks from the workshop manager and instructor, Grace Chepkemei.

The seven-day workshop was a beehive of activity and I really commend the participants for showing such great dedication. They all persevered during all the days and sessions except when it was unavoidable due to work and family issues. The training fulfilled their expectations of having another training after the fireless cooker workshop. Thanks to all our sponsors and partners. It is still necessary to continue with creating awareness about solar cooking in other areas in order to impact lives of communities. No one will know what they can do until it is taught and tried. There is a lot of demand for further training and many people really want to use this clean, safe, and free of charge energy from the sun. Follow up also is very essential to determine how the solar cookers are working and impacting the community. Indeed more training is needed and I hope this can happen again as we need to expand to other areas within the region.

The workshop on the Haines solar cooker was incredible. One could feel that the participants are indeed in terms with all they leant. Every day of the workshop started with new energy and joy. I believe without fear of contradiction that the participants really benefitted from the workshop, and it will truly impact and change their way of thinking. They are now equipped with knowledge enough to go out and teach the world about solar cooking and how to make the Haines cooker and fireless basket. On behalf of St Joseph and John 23<sup>rd</sup> Catholic Church may I convey my/our gratitude to Solar Education Project for their concern, love and leadership in spearheading and organizing, and writing all the teaching material to make this training successful. Thank you, Mary and Jennifer, for all the efforts and going out of your way to ensure the training is successful.

Thank you, Roger Haines, for your love, support, patience and unmatched kindness. We are very much aware that you are the engine behind all this. You provided all the materials necessary to make the cookers, and you took us through the way to make the Haines pop open cooker with love and patience. St Joseph cannot thank you enough. I still believe that this is the beginning of a great journey with Haines cookers. Thank you so, so much.

In a special way I would like to convey our gratitude as St Joseph Small Christian Community and the entire John 23<sup>rd</sup> Catholic Church to Rotary Club of San Diego, California for their sponsorship. Gratitude also to our partners Solar Household Energy, Solar Education Project, and Haines Solar Cookers. The training has given the participants confidence to do things never dreamt possible. Most people are not aware of their potential until they are trained. To this I say thank you to all concerned for making the people knowledgeable. To my friend and fellow Rotarian Camily Wedende, who taught me about Solar cooking may God bless you. You have a selfless spirit and having met you was a blessing to me and the community at large.

I cannot forget to thank Rev. Fr Sospeter for giving us the venue and space in his house, giving us a projector to use in our instructions and being there for us throughout the workshop and helping us as an instructor. Father Sospeter was very good at making the template and he played a big role in the teaching of making the Haines pop open cookers. He was never late to open for us the day with a word of prayer and to see that everything was running smoothly. Even in his absence he made sure everything was available during the workshop. Father gave us full support in every way possible. We owe him great gratitude.

#### I will end by this quote:-

"If we all did the things we are capable of doing, we would literally astound ourselves." ThomasA.Edison

## Expenditures - Final Haines Pop Open Solar Cooker Workshop, St Joseph in Eldoret, Kenya 7 Day Workshop September 19 – 25, 2022

Funding was provided by Rotary Club of San Diego, CA to Solar Education Project for a seven-day workshop training twenty participants to use the Haines Pop-Open Solar Cooker. The workshop took place at St Joseph Church in Eldoret, Kenya. Amounts are given in Ksh and USD based on exchange rate of 1USD = 117Ksh

ITEMS	FUNDING in USD	Cost in Ksh	USD @ 1:117
San Diego Rotary Club	2500		
Materials to make Haines Pop-Open Solar		HSC	
Cookers			
20 surfuria		18,340	157
20 lids		11,600	99
Paint supplies		8,445	72
Pre-planning expenses		12,245	105
*see details in Expenditures - Preparation			
SUBTOTAL		<mark>50,630</mark>	<mark>433</mark>
SEP workshop curriculum		SEP	
Food		47,500	406
Rental of large tent, tables and chairs		27,846	238
Printing of Workbooks, Certificates and Sign		30,000	256
Editing of workbook materials in Swahili.		14,040	120
Stipend for Grace (Project Manager and		16,380	140
Trainer)			
Stipend for Camily (Trainer)		12,285	105
Transportation		9,000	77
Per diem for 20 focus group members		32,760	280
Stipend for person to take photos/videos and		8,190	70
share via WhatsApp			
SUBTOTAL		<mark>198,001</mark>	<mark>1692</mark>
Project Oversight SEP			200
Western Union Transfer Fees			5.97
Additional funding to Grace for miscellaneous			75
TOTAL			<mark>2405.9</mark> 7

FUNDING	2500.00
EXPENDITURES	2405.97
BALANCE	94.03