

Third International Conference **CONSOLFOOD2020**
Advances in Solar Thermal Food Processing

22-23-24 January 2020

INSTITUTE OF ENGINEERING; UNIVERSITY OF ALGARVE; CAMPUS DA PENHA; FARO-PORTUGAL

**Solar Cookers International enhances the global solar
cooking movement through leadership, advocacy,
research, strengthening capacity and sharing
resources**

Caitlyn Hughes and Mindy Fox

**Institute of Engineering - University of Algarve
Faro; Portugal**

Leadership
&
Resources



Photo credit Julie Greene



Caitlyn Hughes
Executive Director



Mindy Fox
Special Project Manager

Who is Solar Cookers International?

Mission & Vision

SCI improves human and environmental health by supporting the expansion of clean and sustainable solar cooking in vulnerable regions.

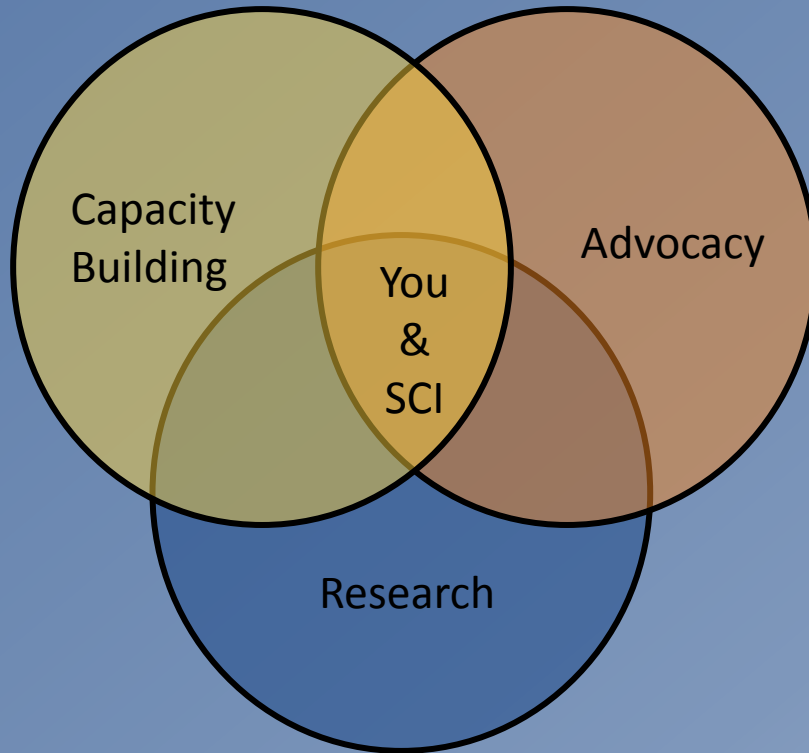
- Non-profit leading and convening the solar cooking sector since 1987
- Hundreds of collaborators in over 135 countries



Photo credit Kriti Shrestha

How does Solar Cookers International work?

Solar Cooking



Thanks to

- SCI Global Advisors
- SCI Board of Directors
- SCI United Nations Representatives
- SCI Associates
- SCI supporters
- SCI volunteers
- SCI collaborators



Photo credit Global Solar Education Project



Building
Capacity



How and why does SCI build capacity?

SCI facilitates expertise and resource sharing, so collectively, we can grow and scale up to reach the demand of 3 billion people still cooking over open fires



Available
SCI
Resources



SCI Toolkit

- Online collection
- Multiple audiences
- Multiple purposes
- User friendly
- Effective

Introductory Tools	Technical Tools
Advocacy Tools	Teaching Tools
Business Tools	Testing Tools
Project Tools	Networking Tools

www.solarcookers.org/resources/download/sci-toolkit

Solar Cooking Wiki

- World's largest online solar cooking resource
- About 1,800 pages
- 37 languages
- Wealth of solar cooking information

www.solarcooking.org

Global Map of Solar Cookers

- Input from distributors and cooks
- Track progress
- Quantify impacts

www.solarcookers.org/work/capacity/distribution-solar-cookers



Impacts of Solar Cooking

- 3.9+ million solar cookers worldwide (and counting...)
- Over 14 million people directly impacted by solar thermal cooking
- 7.5 billion meals solar cooked
- Preventing almost 30 million tons of CO₂ emissions
- \$200 billion in potential savings
and benefits annually (*World Bank estimate, 2016*)

<https://www.solarcookers.org/work/capacity/distribution-solar-cookers>

Solar Cooking Impact Summaries



Solar Cooking Impact Summaries

- Number of known solar cookers
- Population reliance on solid fuels for cooking
- CO₂ emissions prevented
- Premature deaths due to household air pollution
- Potential savings from switching to solar cooking

Exploratory Resident Survey

- Community tool
- Assess need and desire for solar cooking
- Critical step towards success
- Helps formulate appropriate initiatives

www.solarcookers.org/resources/download



Adoption & Impact Survey

- Gather baseline and post-distribution data
- Quantify the use and impact
- Support increased adoption of solar cookers with the data

www.solarcookers.org/resources/download

(available in Microsoft Word and Google Forms formats)



Benefits of membership:

- Webinars
- Use of SCIA logo
- Networking with high impact collaborators
- Sharing your organization's profile



www.solarcookers.org/partners/sci-association/join-solar-cookers-association

Join the Solar Cookers International Association:

www.solarcookers.org/partners/sci-association/join-solar-cookers-association

SCI Webinars

Join the SCI Association to access

Topic examples:

- Promoting solar cooking as a social business
- Engaging students in cross curricular solar cooker lessons
- Testing for consumer certification
- How to create your own solar cooking Wiki page

How and why does SCI build capacity?

On-the-ground initiatives:

- To develop, test, implement, and promote best practices
- To have successful SCI and collaborator examples to share with government leaders when advocating
- Contingent on SCI receiving dedicated funding



Photo credit Sperancea Gabone

How and why does SCI build capacity?

Recent SCI initiatives:

- Fresnel lens (Heliac) and box cookers (ULOG) in Kakuma Refugee Camp, Kenya
- Box cookers in Tanzania
- Reflective panel (CooKits) in Lower Nyakach, Kenya
- Parabolic solar cookers and solar dryers in Nepal



Photo credit: Kriti Shrestha

Recommended practices

Local production

- Affordable
- Accessible
- Sustainable
- Scalable
- Environmentally friendly
- Eases maintenance and repairs
- Builds capacity
- Strengthens local economy



Photo credit Alan Bigelow, Ph.D.

Recommended practices

- SCI technical assistance
- Cooker design clarification
- Safety enhancements



Photo credit Alan Bigelow, Ph.D., unknown

Recommended practices

- Performance Evaluation Process (PEP) testing
 - Informs appropriate cooker type selection & design elements improvements
- Project design; budgeting; risk assessment and mitigation; and MOU creation
- Monitoring and evaluation (SCI Adoption & Impact Survey, participant selection)



Recommended practices

- Trainers similar in demographics to end users (gender, language, living circumstances) who are competent, regular solar cooks
- Demonstrations; practice what we teach



Photo credit Alan Bigelow, Ph.D.

Recommended practices

- Communication, credit, and respect (i.e. permission to share info such as photos, photo credits, etc.)



Photo credit Alan Bigelow, Ph.D.

Research

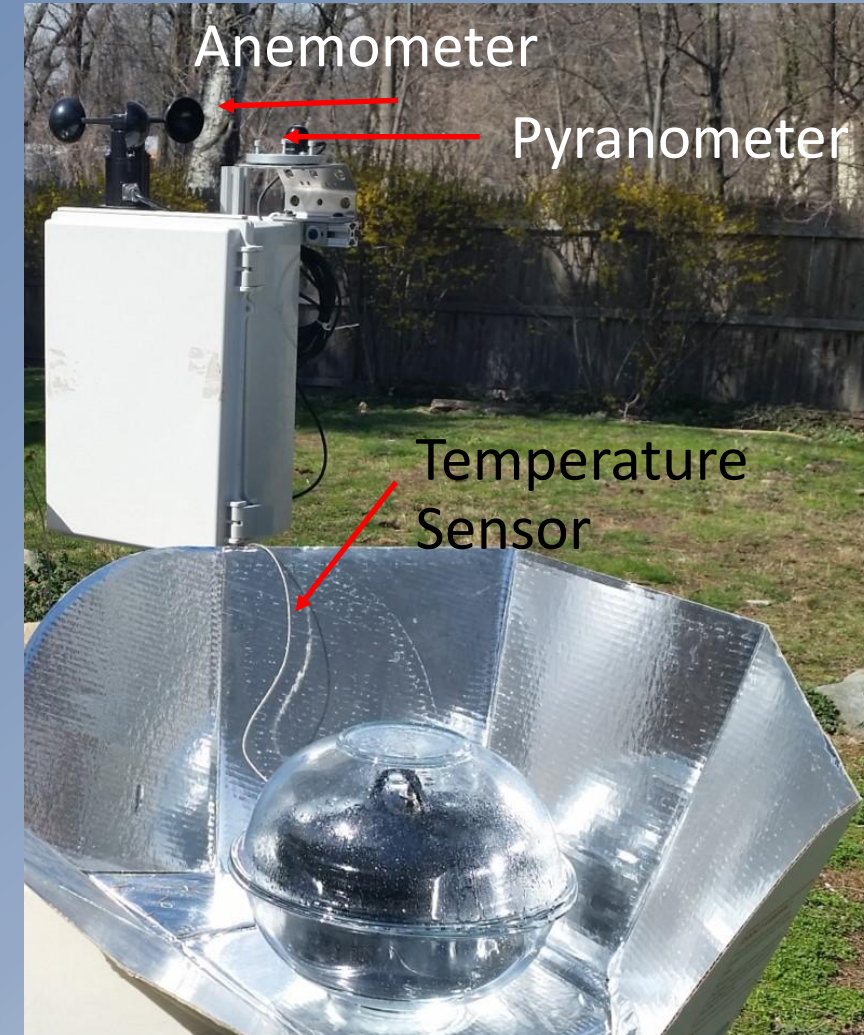


How and why does SCI research?

Performance Evaluation Process

- Provides a single power measure of thermal performance, in Watts
- Objective, scientific, replicable
- To increase overall adoption of solar cooking
- Created by request of the sector
- Harmonizes with the International Organization for Standardization (ISO)

Test station designed and assembled
by SCI Research Specialist Justin Tabatchnick



International Organization for Standardization (ISO)



SCI Science Director Alan Bigelow, Ph.D. and SCI Global Advisor Godfrey Mawira at the ISO TC 285 Plenary in Nairobi, in November 2019.

How and why does SCI research?

- Increases credibility of the solar cooking sector with the related, interested scalable parties

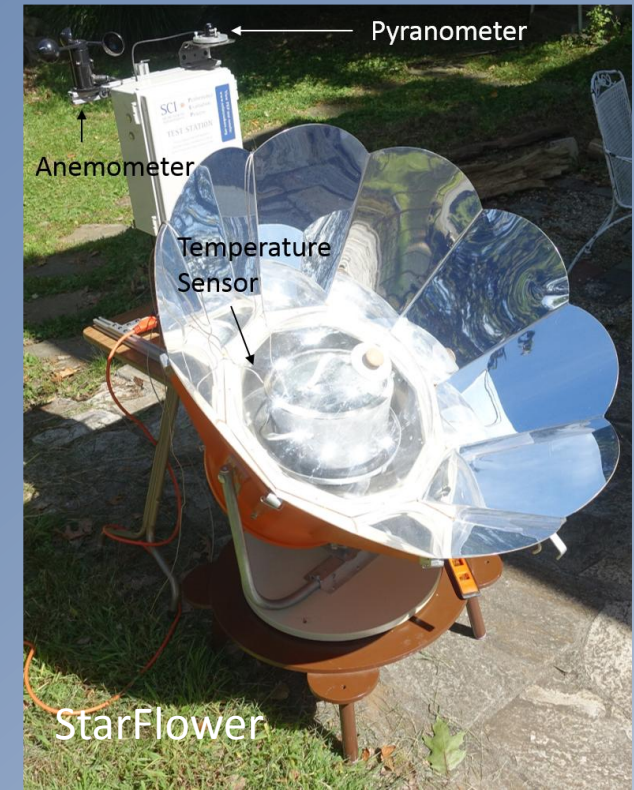


CONNECTING COUNTRIES TO CLIMATE TECHNOLOGY SOLUTIONS

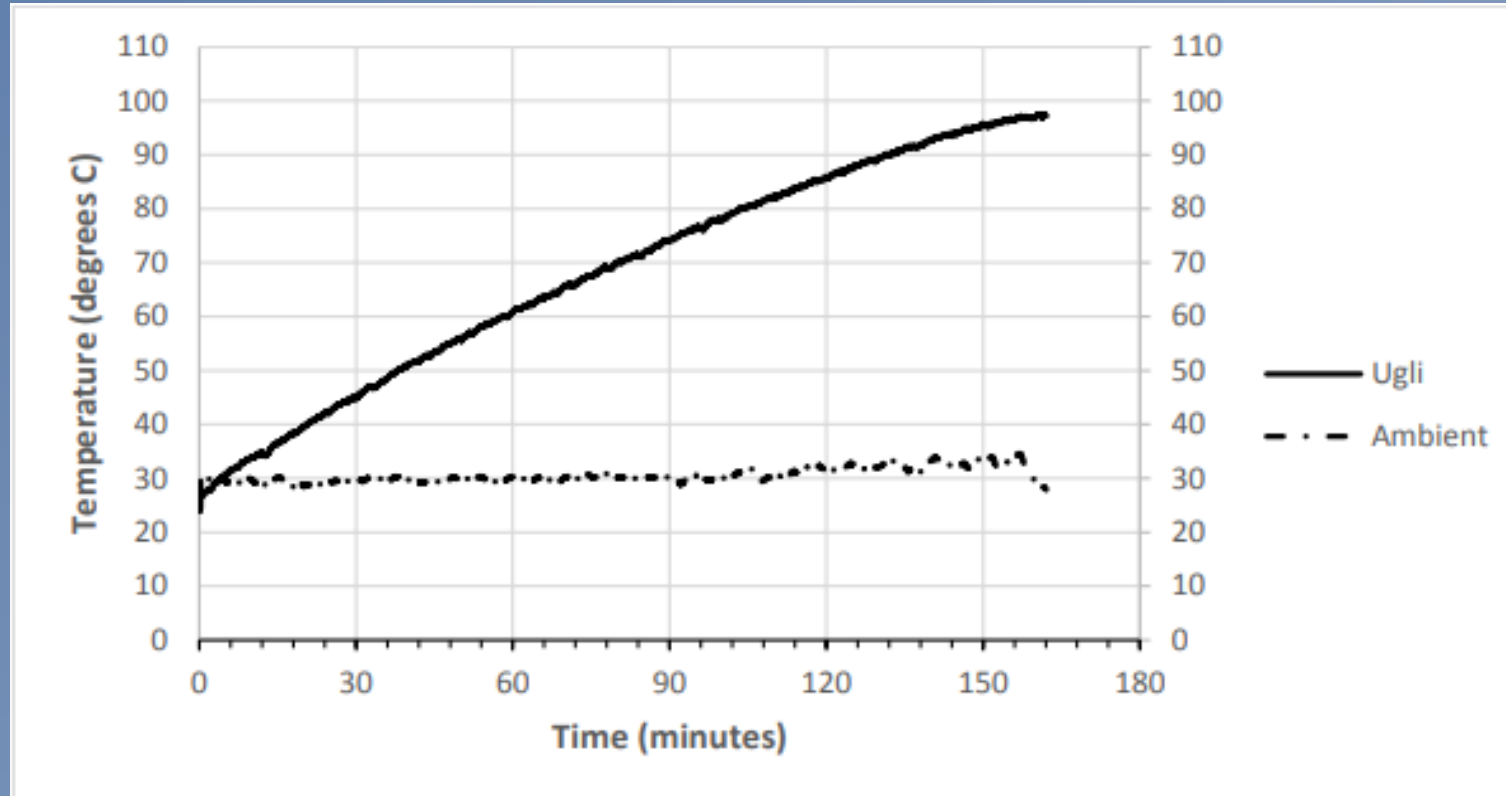


Photo credit Rob Tyrrell

PEP committed solar cookers

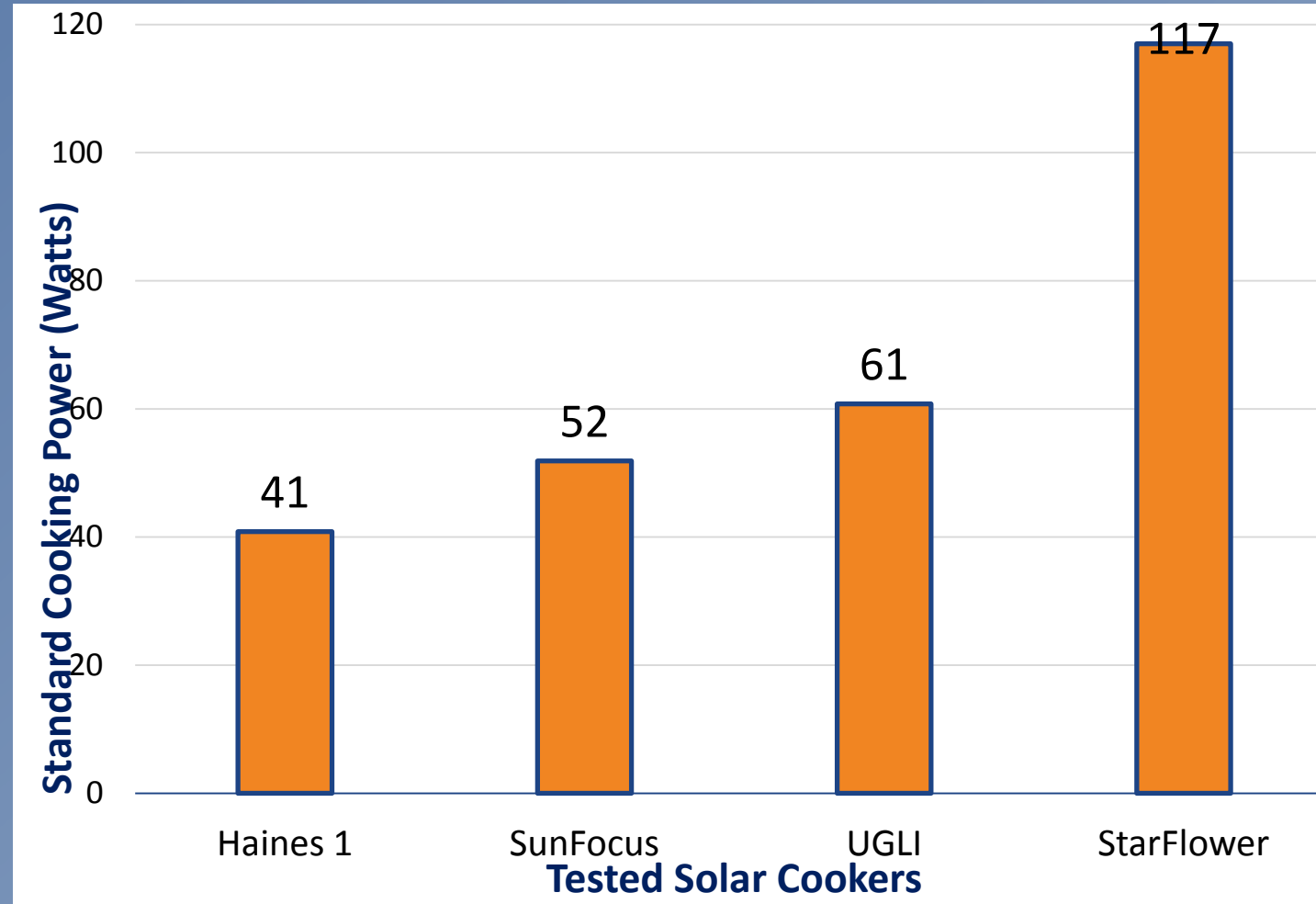


Performance and Evaluation Process Test Results



Temperature profile of 3.27 liters of water (solid line) and ambient air (dotted line), while monitoring an UGLI box solar cooker with two Granite-Ware cooking vessels

SCI PEP test results



www.solarcookers.org/resources/results

SCI solar cooker testing centers

(1) California
(USA)



(2) New York
(USA)



(3) Nepal
(Asia)



(4) Kenya
(Africa)



PEP test
centers
increase
local
knowledge,
ownership
and
prominence
of solar
cooking

Photo credits:
Shannon
Watkins,
Raman Aylur
Subramanian,
Alan Bigelow,
Ph.D.

Scheduling a Performance Evaluation Process Test

www.solarcookers.org/work/research/schedule-test

Advocacy



Why does SCI advocate?

Advocacy

- SCI is uniquely qualified to represent the solar cooking sector with consultative status at the United Nations since 1996
- To get top down (in addition to and bottom up support) for solar cooking in policy and funding



How and why does SCI advocate?



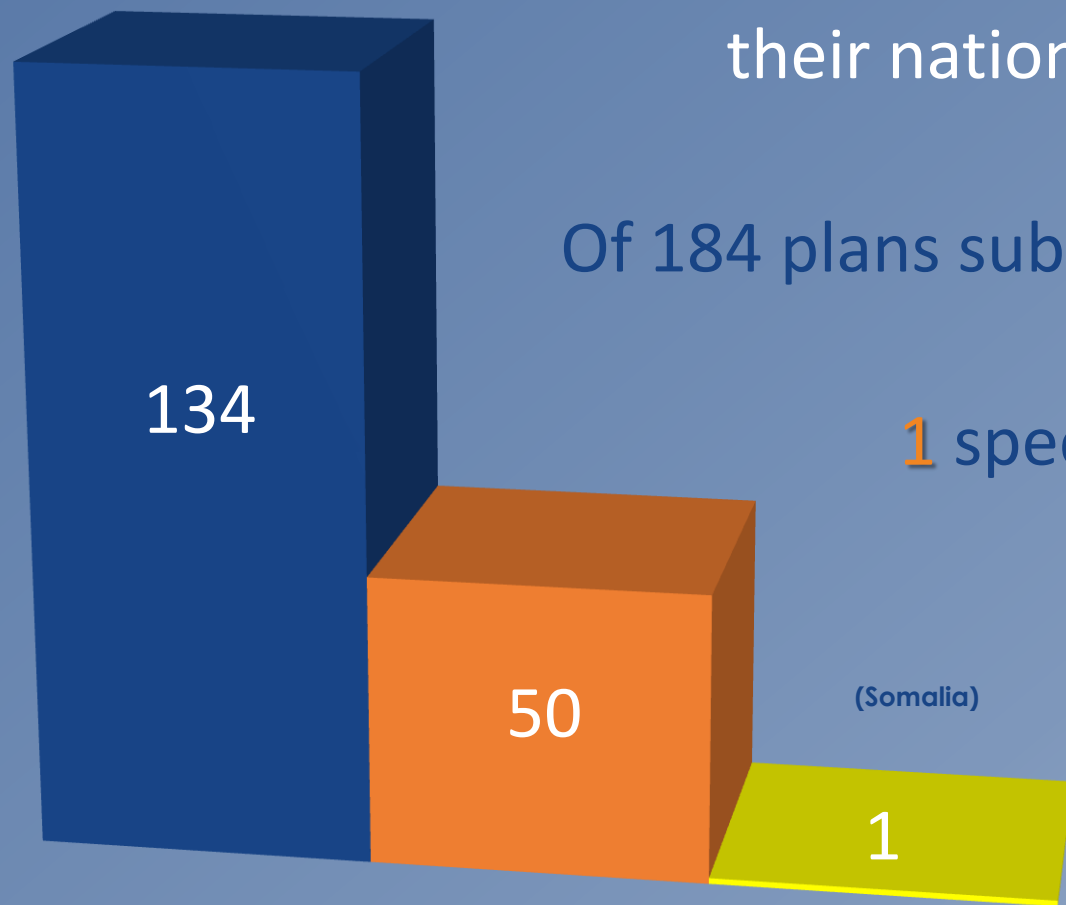
Educate government leaders

How and why does SCI advocate?

Encourage country governments to include solar cooking in their national plans to address climate change.

Of 184 plans submitted, 50 mention cooking or cookstoves

1 specifically supports solar cooking



■ No mention of cooking ■ Mention cooking/cookstoves ■ Support solar cooking

How and why does SCI advocate?

Country
government
support is key
for unlocking
additional
resources and
funding



Photo credit Rob Tyrrell

How and why does SCI advocate?

Receive supportive statements from organizations like the United Nations Framework Convention on Climate Change, the International Solar Energy Society, & the Global Solar Council



Photo credits Rob Tyrrell



How and why does SCI advocate?

Elevate the voices of our collaborators so they can share their successes



Photo credit Rob Tyrrell

How and why does SCI advocate?

- Identify future opportunities for our sector
- Meeting with the World Food Program, who understands being able to sustainably cook food is essential for being able to eat



Photo credit Rob Tyrrell

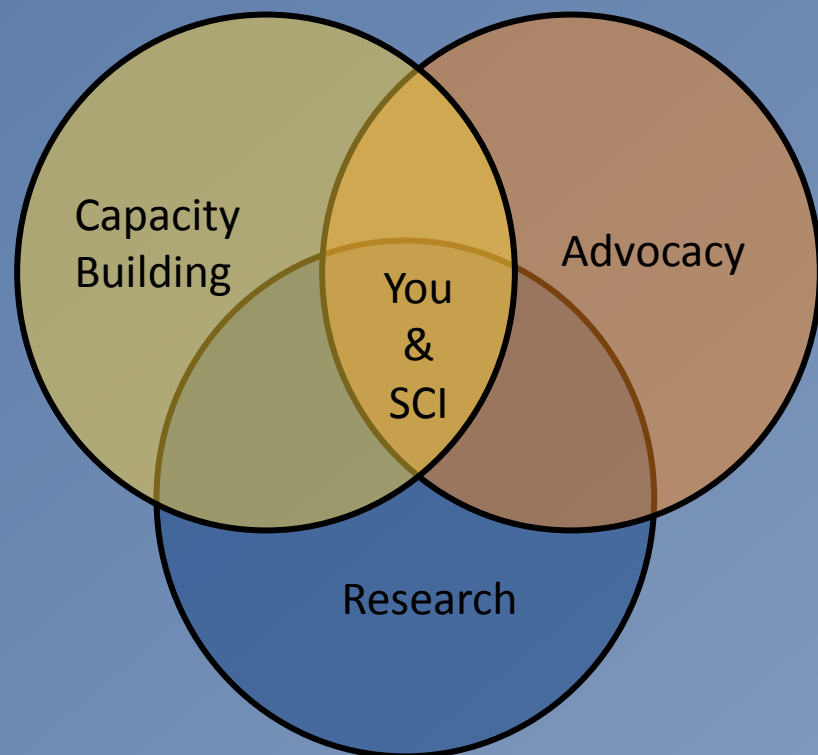
How and why does SCI advocate?

Through press conferences and the press, information becomes available to millions of people around the world



Photo credit Rob Tyrrell

What can you do? (How to engage with SCI)



- Access and use SCI's resources
- Contribute info to the Global Map and Solar Cooking Wiki
- Commit to PEP testing and use the results
- Join the SCI Association
- Sign up for more information

www.solarcookers.org

Thank you to all of our collaborators

Working together strengthens our overall sector to
increase solar cooking worldwide



Photo credit Charley Cross

CONSOLFOOD2020



Thank You to Celestino

