

This article was written by former SCI employee Ramon Coyle.

What can one person do to promote solar cooking?

The first answer: Join with others! Then you won't be just one person anymore.

The second answer: Devise an action plan.

1. Make or buy a solar cooker. Congratulations—you have just done more than the average person to increase the number of cookers in the world.
2. Save money on cooking fuel by using the cooker often. Congratulations—you have created a living example in your community of the value of solar cookers.
3. Use that money to 1) Pay yourself back for what you spent on your cooker and; 2) Repair or replace your cooker when needed and; 3) Make or buy one extra cooker
4. Teach someone else to use the extra cooker and to save money with it. Work out a plan for that person to pay you back for the money you spent on that cooker and to save for their own future repairs. Congratulations—you have just doubled the number of solar cooks in your community. Few communities have done as well.

This four point plan can be adapted for larger goals. If you have enough money, you could start with 5 cookers and 5 cooks who will each save money by using the sun for fuel instead of paying for cooking fuel. Or with 100 cookers and 100 cooks.

This plan can work more rapidly in connection with my first answer: join with other people. For example, some people will find it very difficult to come up with the money to buy the supplies to make even one cooker. Perhaps 5 or 10 people could put their money together for the first cooker. They could take turns using the cooker, but each user would have to pay an amount equal to the amount of money they saved by not having to buy fuel for that day's cooking.

This pool of money could be used to

- Pay back everyone the amount they contributed to buy or make the first cooker.
- To pay for a second cooker that they would share the same way as the first cooker.

Yes—this would be a very slow way to bring solar cookers to your community. But it is a way to begin. And the process speeds up. With two cookers in use, your group should save enough money to buy a third cooker in half the time it took to buy the second cooker. When your group members are using nine cookers to save on fuel costs, the time needed to save for a tenth one will be short. And then—many congratulations to you, for you have built a base of 10 experienced, knowledgeable solar cooks where there had been no solar cooks before. Other people nearby may learn from you.

I admit there could be problems with these examples. One big problem is money. I will discuss that problem in the last section of this essay — a section called “A Problem with Money.”

Another problem could be that your climate may not be suitable. The pattern of clouds in your area may make solar cooking much more difficult. Even in the hottest countries, the climate might not be right because of frequent clouds, unpredictable clouds, or clouds that come at the time of day people would want to use their solar cookers.

The answer to this problem is to not try to promote solar cookers in these areas. An article called Predicting the usefulness of solar cooking in a given locality has a helpful checklist of questions to help you decide how well solar cooking suits your climate. This article can be found in the Project Resources section of this wiki.

If the climate is not right, alternatives to solar cooking may be better for you. The main alternatives are the “improved woodstoves” (such as the Rocket Stove and the “mandaleo jiko”) and heat retention cookers also known as “hay baskets” or “hay boxes.” Information about these alternatives can be found on the internet at here and at <http://www.bioenergylists.org>. There are many helpful articles at bioenergylists. (You can read articles without needing a password or login for their internet site. I recommend the section on "references" and the list of other useful internet sites — these are found on the right side of the page right under the password and login area.)

There could be other reasons why people do not use the solar cookers very often. The “predicting usefulness” checklist that I mentioned two paragraphs ago gives some of the reasons why solar cookers might not fit well with some cultures and lifestyles. If there are strong cultural reasons why solar cooking does not fit, consider hay baskets or improved stoves. Even if the weather and culture are right, some people might get little use from the solar cookers because of personal reasons. Maybe they do not want to learn the new skills. Perhaps they are not really interested. Maybe they would rather cook the old way. The answer to this problem is to work with other people--people who are interested, people who will make an effort to learn.

Group Process

I have been strongly suggesting joining with others, but some new problems can come from joining with others. In the United States, we call these problems and ideas for dealing with these problems “group process.”

By the time I was 40, I had slowly learned that there are some people who talk a lot but do little. Some people do great work, but are very good at making other people angry and driving them away. Some people get along very well with some people, but fight with others. Some people are good in every way, but they just have strong disagreements about what needs to be done and how to do it. Yes, joining with other people to work together is not always easy. There are no perfect answers.

People who seek other people to join in working together often find it easiest to accept anyone who offers to help. I am not sure this is always a good idea. The purpose of working with other people is to achieve greater goals. People who are difficult to work with can make it harder, not easier, to achieve goals.

I like to work with people I trust. Trust is especially important when a group is collecting and spending money. I like to work with people who will actually do the work they promise to do—and I very much like people who tell me when they cannot do the work I ask instead of telling me “yes” and then not doing it.

I never like it when someone agrees to do something and then does not do it because they had never really agreed that doing it was a good idea. If there are disagreements about the work of a group, those disagreements must be discussed. I have learned helpful things from disagreements. Sometimes I learn that the other person has good reasons for disagreeing. Sometimes I learn that agreements can be reached by being careful about our words and making sure we mean the same thing when we use the same words. Sometimes disagreements develop because one person is thinking long term and the other short term. Sometimes in a disagreement about my way or your way, we can find agreement in a third way. Sometimes I learn that this is one person or one group that I should not be working with because the disagreements are so basic or so frequent.

I like to work with people who are pretty smart, who make good choices and who do the group's work well—people who care about the group and do their best for it. If there are people I am not sure about, I try not to give them a lot of responsibility at first. I try not to put myself in the position of having to depend on someone who is not dependable. I might ask an experienced, trusted member to work with and watch over a new or untrusted member of the group. If I have two good people who do not like each other, I will create two sub-committees or sub-projects, one for each of them.

When possible, I like to recruit new people to a group who have the skills my group is lacking. Before doing this, I first have to admit to myself that I am not good at everything. For a good solar cooking group getting started in a sunny but low-income village or town, I would look for people with the following qualities:

1. At least one person who is good at judging character to help me figure out who is honest, who is reliable, who is a trouble-maker and who is lazy. This person would help me look for a few people who have the gift of having people like them quickly—the gift of making people want to help them and join in what they are doing. I wish I had that gift, but at least I have had the good fortune to work with a few people who did have it.
2. At least two people who know the community very well—they know who the important people are in town—who makes the decisions. They know which people are influenced by other people and they know how things really get done—whether it matches the official story of how things get done or not. It helps if people in your group are friends or relatives of important people and the people who get things done in the community.

3. Two or more people “who know how groups work.” Everyone who gives time or money to a group wants to be treated fairly and have a chance to voice their opinions, ask questions or make complaints. They want to know that the group is doing something useful and that the group’s plans make sense. It is not unusual for groups to become dominated by 1, 2 or 3 people, and that causes others to give up and quit the group. Groups usually are so busy with other worries that they forget to be completely fair and hear opinions, answer questions and resolve complaints— unless they make a special effort to pay attention. “People who know how groups work” are well aware of these facts and have learned or developed methods for limiting the damage—methods of “group process.” People who are good at “group process” teach as much of these skills as possible to as many of the other group members as possible.
4. At least two or three people who understand money. Someone has to keep track of all the money that comes into the group and the money the group spends. Someone has to keep the money safe and make it clear to all the other members how much money comes in, how money is spent, and how people can be sure none is being lost, wasted or stolen. Someone has to make sure that the money saved by using the cookers is enough to pay for the group’s expenses (so that all the members get a cooker and can get repairs when needed—with money left over to keep the project growing. The other two people who understand money would help watch over this “someone” so that the group is very, very certain that the money is well managed.
5. At least one person who is good at making things and fixing things—like making and repairing solar cookers. Two, three or four people like this would be better. Best would be to teach many people how to make and repair cookers.
6. At least one person who is good at getting supplies--who can find the best place to buy things at good prices and bring the supplies to where they are needed.
7. Most importantly, the group needs people who are very interested in cooking. These people will learn and teach the best ways to solar cook the favorite foods of everyone in the community. Their love of cooking and skill in cooking will inspire others to solar cook.
8. One or two people who understand teaching, because teaching different skills is so important to a strong and growing group.

Not everyone in the group must have all these skills--for a strong group, you will want a variety of people with varied skills who are still able to understand and cooperate with each other.

In practice, most good projects start with 2 to 5 smart, hard-working people who can work together. Their energy draws others--more often as helpers than as new leaders, but developing new leaders is usually very valuable. I can give examples of strong solar cooker projects that developed from the initial efforts of a few dedicated people: the EG Solar group of Germany (begun by Ulrich and Lisel Oehler), the transformation of the city of Baroda, India, into a solar cooking city (thanks to Javahar and Aruna Maniar), and the Cedesol groups in Bolivia (led by Ruth Saavedra and David Whitfield) and Paraguay (with an effective partnership between Martin Almada and Jean-Claude Pulfer. Almost all of these people worked on their projects for 20 years or more.

When I was a group leader, I tried to match the interests and skills of each member to the different types of work that needed to be done. Difficult, important jobs would usually go to “the people who can do that job best.” I tried to make sure that “the people who can do that job best” taught several others in the group to “do that job best,” too. The more people who can do more jobs “the best,” the stronger the group is. It is likely that most cooks in the community are women. It is likely that the best people to help these women learn about solar cooking and how to be effective, money-saving solar cooks are other women. The women who teach solar cooking skills to other women are key to the whole plan working. It is unlikely these women will do their best teaching if the group does not respect them and does not seriously listen to them. I know gender roles and limitations vary from place to place in this world. In some places, there are jobs men will not do and there are jobs women are not allowed to do. It can be very challenging to know how to balance these roles and limitations against the need to be fair to all group members. No one from outside your culture can tell you how to answer these questions. I will say one thing and repeat two others.

1. If your group wants to make solar cooking work for hundreds of families, you will need many women teachers and will have to be very sensitive about how the group treats these important members.
2. Important jobs should be done by those who do that job best.
3. The more people who can do more jobs “the best,” the stronger the group is.

If the group has very big goals for spreading solar cooking rapidly or to large areas, it may want to look for help from sources outside the community. In this case, the group would want a few members who have skills or experience in dealing with large institutions like government offices, UN agencies, large non-governmental organizations, banks, big church organizations, etc. Large institutions often are demanding and odd in their expectations. Having someone who understands them and has dealt with them will help any group that does business with large institutions.

Strategy

Often, the best way to get the right help is to ask a particular person who has control of resources that your group needs (money, for example, or a truck or a good location for teaching a group of people how to solar cook). If you are friends with that person, it is easier to ask. If you are not friends, then you might get help in asking from someone who is your friend and the friend of the ally you want. Many successful groups have gotten much valuable help by first thinking about who they need to be friends with (or have some influence with) and how they can work with the friends they have now to become friends with the people who will introduce them to the particular person they want to reach. In the United States, we call this type of thinking “strategy”. Strategy can be used for other purposes beyond getting to know the right friends, although having the right friends is helpful for many purposes

Every solar cooker group must have a goal to achieve or a need to be met. Many have more than one. Choose a goal that is possible to achieve. Choose a goal that is clear and specific so that you know how close or far from it you are. To achieve the goal or meet the need, the group must have some resources—money or supplies, knowledge about cookers and most importantly the time and the abilities of people.

Whether it was a solar group or not, the great majority of all groups I have been in or have observed or have read about have had goals that were bigger than the group could achieve with the resources it had. For example, a very large group called the government of the United States runs into this problem so often that it uses the special term “budget deficit” to talk about it. There are 3 practical ways to deal with the gap between big goals and small resources.

1. Adopt smaller goals.
2. Increase resources.
3. Combine those two ways wisely. This is strategy.

In the second paragraph of the first section (What Can One Person Do) I gave an example of a strategy for gaining the resources needed to make a second solar cooker after a small group already had their first cooker. I continued with other examples of how to increase a group’s resources by repeating simple steps. My next example starts with just one person who wants to bring solar cooking to a district of 1000 families. I will call this person Toni. Perhaps in this district, 100 families are too rich to worry about the cost of their cooking fuel, and 100 are not willing or able to try any new cooking system. Perhaps another 100 families could not be trusted to pay their fair share of the cost of bringing the benefits of solar cooking to the district. With these thoughts, Toni can set an ultimate goal of spreading solar cookers to 700 families.

Toni could follow the strategy of starting with 1 cooker and making more one at a time. However, Toni would need many years to build 700 cookers and teach 700 people to use them. Toni decides that to meet this big goal, more help is needed. The work will go faster

1. if other people join Toni in doing the work
2. if some important or influential people praise the project and encourage people to support it
3. if no important or influential people oppose or ridicule the project
4. if other people join with Toni to contribute to buying supplies for the first cookers

Instead of simply making as many cookers as possible, Toni makes one cooker and then begins showing solar cooking to people who can help — the elders, the religious leaders, the school teachers. Toni makes an effort to find influential women who will favor and not oppose the new way of cooking. Toni knows that the women in this district know all about cooking. Toni will also seek women who are eager to try the new way to cook and to learn solar cooking skills. From the most eager learners, Toni will find future teachers who will help the project grow. Toni spends 6 months showing how solar cooking works and talking to people

Instead of going directly from 1 solar cooker toward the goal of 700 solar cookers, Toni has taken an intermediate step: gathering resources that will help the project. This is strategy at work. Maybe in 6 months, Toni has made sure that many important people and influential women are friendly to the idea of solar cooking. Maybe Toni has found 20 families who want to help. Toni and each of the families agree to give a little money to buy supplies to make some cookers—but they only have enough money to buy two. They plan to share the cookers and to use the money they save on cooking fuel to buy supplies for more cookers. With Toni's cooker, the group has 3 cookers. They slowly save enough money for a 4th cooker and then a 5th cooker.

But 20 cookers—one for each family—would let the group save money faster. So, Toni and the group keep talking to all the important people who like the idea and a few of them give a little money — enough for cookers 6 and 7. And a few of these important and wise men and women have an idea: ask the wealthy merchants in the district to contribute. Toni and these wise people discuss the idea and choose 5 merchants to ask. The group chooses which elders and religious leaders will talk to which merchants. These leaders will tell the merchants that the merchants will benefit the most from solar cookers. The merchants will be able to sell solar cooker supplies. The money people are saving with the solar cookers will be spent for the merchants' goods instead of being paid to the wood-cutters. 2 of the 5 merchants agree to give to the solar cooker project.

Now the group has enough supplies for 40 cookers—enough for the whole group and for 20 other families. Because they have been talking to so many people and winning friends for the project who tell other people, it is easy to find 20 more families to join the group. Some of the first to join are those who gave money to make cookers 6 and 7. Each of the 40 families agree to use some of their solar cooking savings to help 2 more families get solar cookers—if those families agree to keep contributing part of their savings to the solar cooker project until they've given enough to help 2 more families. The first 40 families will help 80 families get cookers. By giving part of their savings to the project, these 80 families will help 160 families get cookers. The number of new cookers will double as each group completes its promise to help the next group. The goal of 700 will be reached much more quickly because Toni thought more about gathering help at the beginning instead of simply counting cookers.

This story is about strategy. The goal was 700 cookers and 700 skilled solar cooks. To reach this goal, Toni wanted a team of 20 to 40 helpers who would contribute steadily to the project for a few years. Developing a good team was an important sub-goal (or “objective”). To reach this objective, Toni talked to the elders, teachers, religious leaders and influential women in the district to get their help in identifying and recruiting members for his team. Another objective was to get the supplies for 20 to 40 cookers. To reach this objective, the group needed money. To reach the objective of money, the group had to get help from people who had money — the wealthy merchants. To get help from the wealthy merchants, the group got help from the elders, teachers, religious leaders, etc.

Toni and the group took steps that were possible for them, such as simply talking to people, showing how solar cooking works and developing support for solar cooking. This step

allowed the next step: asking for help. First Toni got help in finding members for the team. As the team grew and developed more friends and supporters, it could take the next step of finding the right people to get support from the merchants. The result was a strong start with 40 cookers and 40 solar 40 cooks. Step by step, progress was made. Each step the project took led to a larger step until the steps were big enough to reach the goal.

That is strategy. Strategy is valuable. When you are recruiting new members to your group, try to find a few people who are good at this type of thinking. Even with a good strategy, good helpers, and the right climate and culture another problem is possible--Money. I will add a few words on this topic in the final section of this essay called "A Problem with Money."

What can a small group do to promote solar cooking?

A theme throughout this essay has been "join together with others." So, it is not very surprising that most of what I have written has been about how one person can join with others to form a group, how groups can grow and how they can work smart by thinking carefully about their goal, sub-goals and a strategy that shows the steps to get from the present condition to the group's future goal. The remaining topics I have concern money (next section) and some thoughts related to something I learned when I worked at Solar Cookers International in the job of answering questions from a thousand people around the world who wanted to promote solar cooking. I learned that there are 4 types of small solar cooking groups:

1. Groups from rich countries that want to spread solar cooking "where it will do the most good."
2. Groups from rich countries that want to promote solar cooking in a particular country, district or village which the group is interested in.
3. Groups from poor countries that want to promote solar cooking where they are.
4. Groups from poor countries that want to promote solar cooking where it will do the most good."

My advice to Type 4 groups is to become a Type 3 group if your climate and most of your food supplies are suitable for solar cooking. If not, my advice is to find another type of project that will benefit your local community. The best work in economic, social and community development is always done by local people who know what they are doing and care deeply about it—but the project must be relevant and workable in local conditions.

My advice for the other 3 types of group is to join together with other groups. Type 1 groups would probably have the most impact by devoting themselves to identifying and then supporting a larger, effective group with the same goals. Ten small groups trying to do the same thing are likely to do many of the same things—but ineffectively and redundantly compared to what would be possible by pooling and coordinating their efforts.

Type 2 groups will definitely need to join with a Type 3 group in their town or district of interest. (See the last sentence of the next to previous paragraph.) Type 2 groups may also find they have much to learn from larger solar cooking groups that have experience in introducing solar cooking in districts, towns and villages around the world or in the country of particular interest. Type 3 groups can benefit by learning from and possibly working with:

- the type 1 and 2 groups, large or small.
- other Type 3 groups in your district, country or region
- other types of organizations in your country—religious, secular or government development agencies, alliances of farmers, women’s organizations, environmental groups, health and nutrition promotion groups, etc.

All 4 types of small solar groups can do better by being fully informed. There are many valuable articles posted on the internet at solarcooking.wikia.com That is the home of the solar cooking archive. On the top left of the archive’s home page is a menu or list of topics. Most essential are solar cooking basics and solar cooking in depth. In solar cooking in depth, I especially recommend the promoting solar cooking section. In that section, I recommend scrolling down to the "Advocacy and Publicity" section to select two of my favorite items — Solar Cookers International's *Trainers Manual: Teaching Solar Cooking* and Solar Cookers International's *Field Guide: Spreading Solar Cooking*

If a small group from a rich country works to help a small group in a poor country, my first recommendation is that both groups show a lot of patience with the other group. I suggest that both groups think about a long-term commitment. Unless the goals are small, solar cooker projects may take five or ten years or longer. When two groups from different cultures start working together, it might take the first 2 or 3 years just to learn how to trust each other and understand each other. In these situations, the “wrong communication” is possible, but “too much” communication is not possible.

When two solar groups are in partnership, one may provide most of the money and one may provide most of the crucial work of distributing cookers and teaching people to use them. The group that gives most of the money may think that it should therefore make most of the decisions. The group that receives money may develop the feeling that getting money is easy and that there is no reason to be careful with it. These two responses are common and difficult, but probably not the only difficulties when two different groups try to work together.

Still, I believe strongly in the possible value of partnerships between small groups in rich countries and small groups in countries where solar cooking will make the most improvement in people’s lives. For example, it does not seem unlikely that the members of a single church in the United States, with effort, could raise US\$1,200 each year for a project in another country. That could provide 60 cookers or more per year if very low-cost cookers are selected—and if the group that received the money worked well and wisely. If there were 200 partnerships like that, families needing solar cookers could receive them at a rate of 12,000 per year. If those 12,000 families also contributed a part of what they

saved in their first year, perhaps 20,000 new cookers could be produced in a year.! This would be a significant help in spreading solar cookers. As far as I know, no large solar cooking non-profit organization has produced 20,000 new cookers and 20,000 new solar cooks in a year.

I believe that partnerships between type 2 and type 3 groups can be productive because it has already happened. For example, two church organizations in the United States supported solar cooking projects in Haiti that helped thousands of families obtain solar cookers and learn to use them (before the 2010 earthquake). A group in Majorca, Spain, partners with solar cooker projects in Latin America. A core group of five people in the Netherlands formed the KoZon foundation and developed a productive partnership with an organization of women engineers in Mali to make cookers and teach solar cooking skills. KoZon later worked in Chad with refugees from Darfur, Sudan, to equip thousands and thousands of families to solar cook. Yes, international cooperation is possible and can produce valuable results.

However, before two groups in a partnership like this get too involved in making cookers, they must start with the basics: commitment, understanding and trust. Both groups must have leaders who are committed to the project and committed to having a good relationship to the other group. There should be face to face meetings between members of the two groups as often as possible.

A Problem with Money

In some sections above, I presented a variety of examples of how one person or a small group can take small steps that add up to big results. These examples depend on the belief that a tiny solar cooker project can gain the money it needs to grow if it can capture a portion of what solar cooks save by solar cooking instead of buying fuel.

There are many things that might keep this plan from working. If people do not reduce their expenses for cooking fuel by 30 percent or more, this plan will not work well. Without at least that much savings, there might not be enough money to pay for cookers, supplies and repairs and to contribute to increase the number of cookers.

As stated before, this plan will not work if your climate is not suitable for solar cooking. Because of this money problem, the plan will not work if your local foods do not cook well with solar cooking or if cooks are not able to do their cooking while the sun is strong. It will not work if there are strong cultural pressures not to use the solar cookers.

The plan will not work if people do not cooperate. Maybe some will not make the effort to learn solar cooking and to make solar cooking a habit. Then they will not save any money by reducing their need to buy cooking fuel, and they will not contribute to paying the cost of their cooker or to help bring other cookers to the community. Maybe some people will save money but will keep it all for themselves—if many do this, there will be no source of

money to repay people for the cost of the original cookers, to repair cookers or to make more cookers.

This plan is least likely to work where people do not buy fuel, but instead do the work of gathering firewood or dried dung for themselves. If they do not pay money for the fuel they use now, they will not save any money by switching to solar cooking. People who collect their own cooking fuel are often people who have little access to money. But some money is needed to pay for solar cooker essentials like wood or metal for the cooker structure, some aluminum, foil or mirrors for reflectors and in many cooker designs, glass or plastic to capture heat. Solar cookers would save time for the people who gather their own cooking fuel, but unless there is a way to convert the savings of time into money (for example by spending the saved time producing farm or craft products that can be sold), then my self-help funding plan would not work.

Having said that, let me give one example of how this plan could work. This example is general, but is based on real conditions in a low-income African country as described to me around 2004. In my example, I will use US dollars as my currency. The numbers are not exact, but they are not unrealistic.

A family of five spends 120 dollars per year to cook. With help from the knowledgeable people like Toni and the helpers (see “Strategy” section), this family will learn to save 35 dollars per year with a solar cooker that costs \$12. In one year, the family can pay for the cooker and still have saved \$23. The family could put \$12 away to pay for its next cooker and give \$5 to the committee. The family would keep \$6 in savings that first year.

In the middle of the second year, the family might spend the \$12 it saved to buy a new cooker. This cooker might last to the end of the third year. So, after 3 years, the family has spent \$24 on cookers and has saved \$105 on fuel costs—a gain of \$81. Perhaps the family would keep \$45 of these dollars and contribute the other \$36 to the cooker project. That \$36 would pay for 3 more cookers to get 3 more families involved in saving money with solar cooking.

If the family saves 40 percent of its cooking fuel costs, it would be \$36 ahead after the first year. That could be equal to 5 or 6 days pay for the average laborer. Is that enough incentive to use solar cookers? If not, solar cookers might be difficult to promote in your area. In some places, the savings may be less, in some places more.

The example shows that a group with a few solar cookers should be able to save enough to replace their cookers when needed and have money left over to help others get cookers and join in the savings. But people must cooperate with the money questions and people must use the cookers often—perhaps 250 times per year. In most places, the cost of traditional fuel is rising. In ten years, solar cookers will save more money than they do now.

On the internet at solarcooking.wikia.com, there are other articles with ideas about how small solar cooker projects can bring in money. In the Business Resources section of Promoting solar cooking, I suggest the articles Income Generation, which I wrote years

ago as a letter to someone in Mali, West Africa, and the article Solar Restaurants and Bakeries. See also the article "Raising funds for your project".