INSTITUTE OF CURRENT WORLD AFFAIRS

PJW-6
Women and Cookstoves

Ouagadougou, Haute-Volta
May 1, 1984

Mr. Peter Bird Martin
Executive Director
Institute of Current World Affairs
4 West Wheelock Street
Hanover, NH 03755 USA

Dear Peter,

The forestry development world has only recently begun to incorporate women into its thinking. Whereas discussion of women's activities and participation in this sector was non-existent prior to six or seven years ago, there has been growing recognition that women are major users and shapers of the forests in the Third World. While undoubtedly influenced by the United Nations' Women's Decade, 1975-1985, the major impetus for this recognition by foresters has been their increasing concern with firewood shortages. Throughout the Third World, most of the firewood for domestic use is procured by women and children. Men are increasingly involved in firewood collection as it becomes a cash-generating activity -- they collect large quantities of wood, to transport to urban markets for sale.

To deal with the "firewood crisis", foresters have adopted two major approaches -- to try to grow more firewood and to reduce consumption of firewood. With respect to the latter, the appropriate technology movement has been actively researching and disseminating "improved cookstoves", i.e. simple stoves that are more fuel-efficient than the traditional open fires used for cooking. Since, worldwide, women are the major preparers of food, they are the ones who have to be convinced to try and to adopt these improved cookstoves. Consequently cookstove programs have been geared primarily towards women.

There has been so much identification of cookstove programs with women, that this is often seen as <u>the</u> way in which women and forestry are interrelated. I have been truly amazed in recent months by the extent of consensus on this point. In talking to forestry development experts in the United States, Europe, and West Africa, usually when I ask about the involvement of women in forestry activities, the standard response is "cookstoves". It is an automatic, programmed response, almost like a knee-jerk reaction. Rarely does anyone offer any other information about other ways in which women are involved with

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or affected by forestry activities. While I am glad that there has been recognition of women's importance in this area, I hope that with time this consciousness will expand into a broader understanding of women's roles and activities in this domain.

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Upper Volta and neighboring Sahelian countries have been the recipients of many different cookstove programs. In Upper Volta alone, so many groups came in and started disseminating their own versions of improved cookstoves that the government decided the situation had become chaotic. The Voltaic Institute of Energy (IVE) was formed -- as a branch of the National Center for Scientific and Technological Research. The Institute was given responsibility for coordinating and standardizing testing of various models of cookstoves, as well as other energy-related "appropriate" technologies, such as biogas, solar panels and cookers, and windmills. A morotorium on stove-dissemination was enacted for one year, until agreement could be reached on which types of stoves were most efficient. The several "approved" models were publicized last July in an exhibit held at the French-Voltaic Cultural Center in Ouagadougou.

A second Voltaic government program is the Service of Improved Cookstoves, a section of the Department of Forest Management and Reforestation (DAFR) within the Ministry of Environment and Tourism (MET). This Service coordinates the activities of various cookstove building and dissemination projects. The Service does not run any projects itself. All the project funding comes from outside donors, such as German and United Nations development agencies, and the projects themselves are generally run by development agencies.

Also located in Ouagadougou is the headquarters of CILSS, a permanent inter-state commission of eight Sahelian countries. (Member countries of CILSS are Upper Volta, Mali, Senegal, the Gambia, Mauritania, Cape Verde, Niger, and Chad.) CILSS has a technical support staff for their anti-drought program. Part of their ecology and forestry unit is an improved cookstove project. CILSS has sponsored research on cookstoves and held meetings to disseminate information throughout the Sahel. CILSS has also been working on the establishment of national committees on cookstoves in each of the member countries. The CILSS cookstove project will probably run for another couple of years, to lay this groundwork. By then it is hoped that each country will have its own programs in place to continue these efforts.

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Cookstove programs are primarily staffed by women. It is popularly believed that women professionals will be more successful than men professionals in working with women who are potential cookstove users. The men that do work in this sector tend to focus on the technical aspects of cookstoves, such as their physical design and efficiency.

Three of the four women professional foresters ("forest engineers" in the French educational system) in Upper Volta to have graduated from the University of Ouagadougou have been assigned to work in the Service of Improved Cookstoves. The only two men working for the Service are professional foresters dealing with technical questions. All the support staff are women.

Similarly, the CILSS cookstove project is staffed by women. The Voltaic Institute of Energy has several men, but also one woman, working on technical testing of stoves. A woman sociologist has also recently joined the IVE staff.

The assignment of expatriate volunteers and experts to positions shows a similar distribution by sex. Those working on projects involved in the actual dissemination of cookstoves or research on their social acceptability are women, whereas the technical design experts and researchers have been men.

This staffing pattern has some obvious advantages and disadvantages. While it is probably true that women professionals may be more effective in dealing with women users -- given cultural constraints on the interactions of women with men -- I think it is unfortunate that most of the women professionals in forestry are lumped into this one area. There are no Voltaic women foresters working for any other part of the forest service. (The fourth woman forester works for fisheries.) Similarly, there are no women professionals working on other forestry and ecology-related issues at CILSS. Among the expatriate volunteers and experts, women professionals are more broadly distributed. Some expatriate women foresters, for example, work on village woodlot or tree nursery projects.

Perhaps it is just a question of time. As more women are trained in forestry and related resource disciplines, they will hopefully become better integrated into the forest service. As long as the cookstove program is seen as an integral part of the forest service's larger anti-desertification campaign, perhaps it will be a base of strength from which women can move into other areas, rather than a side-area marginal to national and international development priorities.

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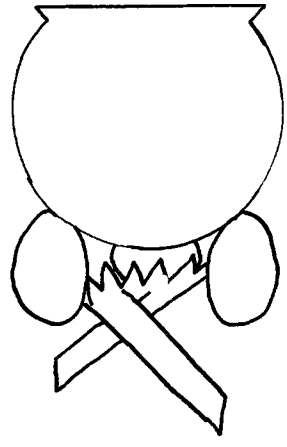
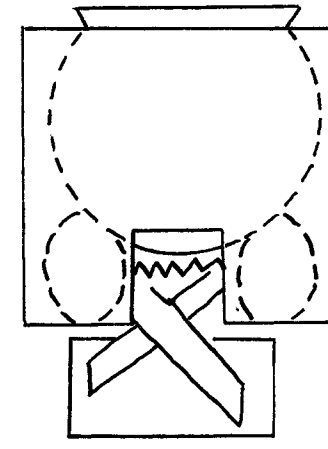
While most research on cookstoves has focused on the technical efficiency of cookstoves in the lab, the real test of their effectiveness comes in the field -- in their actual adoption and use by rural residents. Experience has shown that many stove models that are technically efficient have not been eagerly adopted by rural village women. (Similar issues exist for urban women. However, because different types of stoves are practical in urban settings than in rural ones, the following discussion will focus on rural women.)

One recently-introduced, government-approved stove model that has been found to appeal to rural women is the "improved three-stone stove". The concept behind this stove is very simple. Throughout the centuries and around the world, people have been cooking over open fires, balancing their pots of food on three rocks. The improved three-stone stove improves this idea by enclosing the three rocks and the pot in a banco, or clay, shell to improve the thermal efficiency of the fire -- so less wood is needed to cook a given amount of food. Lab tests have shown this stove to be 40-50% more efficient than the traditional three-rock hearth (open fire).

Traditional three-rock open fire



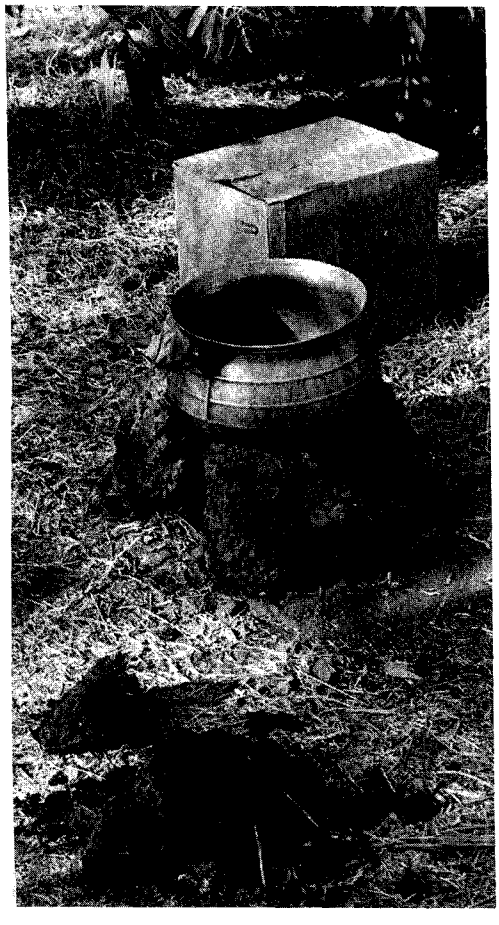
Improved three-stone cookstove



At a recent meeting of Peace Corps forestry volunteers, I participated in a stove-building training session. Susan Dillingham, a Peace Corps volunteer working with a cookstove program in Kaya, taught us to build an improved three-stone stove. Of the nineteen Peace Corps volunteers who work in the forestry sector in Upper Volta, twelve are women. Susan is the only volunteer working full-time on a stove project. But since this stove is easy to build, some Peace Corps staff members feel that it might be a good secondary activity for forestry volunteers working on other projects.

To build this stove, you first prepare the banco mixture. An "improved banco" mixture is recommended, consisting of 4 parts banco to 1 part straw and 1 part manure. This improved mix is more water-resistent than straight banco, and thus the stove is more likely to last through the rainy season. (This consideration is very important, as rural women tend to build these stoves outside -- rather than inside -- their homes.) The mixture is allowed to sit for a few days before constructing the stove, so that the banco will hold together better.

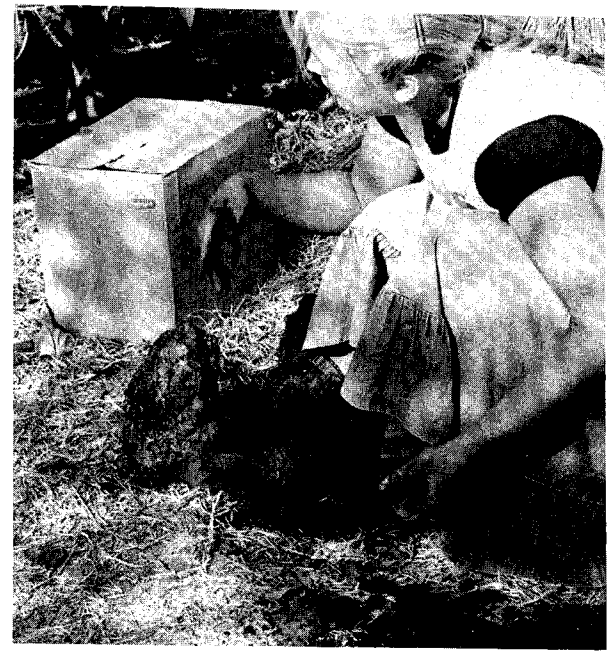
When you are ready to build the stove, you begin with the pot you plan to use in the stove -- as the stove is custom-built to fit one particular pot -- and find three rectangular rocks of approximately the same size on which to balance the pot:



Then, as Susan* demonstrated, you break off a 15 cm piece of straw (the distance from your fingertip to the base of your hand) to measure the distance between the front two rocks. This space is needed for the door through which the wood will be inserted:

*Susan is wearing a T-shirt that reads "Susan's Custom Kitchens Stoves & Ovens". Susan often wears this shirt when conducting stove-building demonstrations. Although the villagers with whom she works generally cannot read English, she says they like the shirt because of its shiny metallic and colored-plastic letters. (It is probably effective for getting people to watch Susan and pay attention to what she is demonstrating.)

You then build walls between the three rocks and cover the outside of the rocks with banco, building up the walls to within a few centimeters of the top of the pot. This part is where you really get involved -- get your hands dirty, so to speak:



A small ledge is built inside, to support a grill to hold the wood off the ground and to permit air circulation. The stove is allowed to dry overnight before cutting out the front door. Another banco slab is also made to put in front of the door, on which to rest the wood: the other end of the wood will rest inside the stove on the grill. The stove is now ready for use. Working in pairs, at a leisurely pace, it took us about three hours to build our stoves. Susan says that the stoves can be built more quickly with experience.

Susan said that this stove has been more successful than a previous two-pot version for a couple of reasons. First, it is cheaper. The previous model had cost villagers about 250 francs CFA (about 58¢) for the cement, and people were not willing to spend the money. The banco stove, however, can be made entirely of locally-available, "free" materials. Metal grills for the stove are available for 100 francs CFA, but satisfactory grills can be made of fired clay or scrap metal for free.

Second, rural women consider the stove to be a "woman's stove", whereas the concrete stove had been considered to be a "man's stove". The rural women make this distinction on the basis of construction techniques and materials. The banco stoves are constructed using materials and techniques similar to those employed by the women in the Kaya region to build granaries. The concrete stoves depended upon masonary techniques, which fall into the men's domain. Because of this difference, the older version of stoves were built by men, while women are building the newer stoves. This change influences not only the initial construction rate of stoves, but also their upkeep and continued use. Women can easily build and repair the banco stoves: for example, the women can smear on more banco to repair cracks. For the concrete stoves, women had to first persuade their husbands (or other male family members) to build them, and then when problems developed, often had to wait for their reluctant husbands to repair them.

Susan and her colleagues have been teaching rural women how to build the improved three-stone stoves. They conduct a demonstration workshop, then return to the villages later on to see how many people have built stoves for their own use. Whereas the concrete stove had been replicated, on the average, ten times per village, during the first month of disseminating the banco stove, 32 had been built in one village, 60 in a second village, and 22 in a third. Initially, thus, the banco stove seems to be an improvement: the real test will lie in the long-term record of use.

Although women are unwilling to use their existing three-rock fireplaces as the bases for constructing improved three-stone stoves, Susan reported that some women have taken their old, outdoor fire rings apart after they have had a chance to use the banco stoves and have decided that the stoves are effective. The women's decisions to keep old fire rings is based on more than just considerations of risk and efficiency, i.e. whether the new stove will work better.

The traditional three-rock hearths also have an important symbolic function among the Mossi people. A new bride's mother-in-law builds a three-stone fire ring inside her son and daughter-in-law's new hut. This fire ring serves as a symbol of the marriage union. If the husband takes this fire ring apart, it is indicative of his decision to divorce his wife and dissolve the marriage. It is a drastic, final step, that indicates a couple's differences are beyond reconciliation. This symbolic element, however, is only attached to the fire ring inside a couple's hut, and does not apply to outside fire rings.

Gudner Lohrman, a researcher with GTZ and the German Program for the Sahel, discussed this issue with women in a village near Kaya. They told her that they would not attach any symbolic significance to the breaking and destruction of an improved cookstove. They are, however, reluctant to build their improved cookstoves inside their huts -- a placement that would protect the stoves from the rains. (It is common for women to cook inside their huts when it is windy or raining, but outside during the hot, dry season.)

While the improved three-stone stove is certainly much simpler than many improved cookstoves, it lacks some of the advantages of other stove models -- such as chimneys to direct the smoke away from the cook's face, or lightweight portability. Undoubtedly there are stoves that are more energy-efficient. But the three-stone stove's simplicity may be its greatest appeal. Not much different from the traditional three-rock hearth, it requires little change in established cooking patterns, is simple to build, and easy to maintain. For busy rural women, such stoves may be the easiest to adopt, requiring little innovation in behavior, yet reducing their consumption of scarce fuel.

There has been a considerable amount of debate as to how significant an impact cookstove programs have had, or potentially could have, on mitigating environmental problems. Firewood consumption for cooking is only a small part of the overall process of deforestation. Although reduction of this consumption may be relatively insignificant on a larger scale, it can have a positive impact at the individual household level. Considering only the potential reduction in wood consumption, I think, overlooks an important dimension of cookstove programs.

Cookstove programs have a broader significance than just the reduction of firewood consumption. These programs offer women a chance to participate in development programs, both as professionals and as users of the introduced technology. Women program administrators and women researchers have an opportunity to learn from rural women of their development needs and priorities. Rural women have a chance to meet women professionals, who may serve as role models or agents of social change. Women professionals can find mutual support in working with one another, just as rural women may be more willing to experiment with improved cookstoves in a group than individually. These social benefits enhance the total environment within which women live, and may be far more important -- though far more difficult to quantify -- than the actual amounts of firewood saved.

Sincerely,

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In addition to those mentionned in the text, I appreciate the time the following took to discuss their cookstove programs with me: Awa Ouedraogo, CILSS Cookstove Project Director; Marguerite Kabore, Service of Improved Cookstove Director; Cecile Ive Ouattara, Voltaic Institute of Energy researcher; Eva Gidotter Janssen, UNSO cookstove project staff; and Carol Eggers, U.S. Save the Children staff.