PEACE CORPS TIMES

Best Shot Photo

Honduras Cloud Forest

Sept.-Oct. 1989

From the Director

On September 13, I signed an agreement with William Reilly of the Environmental Protection Agency (EPA) which President Bush has hailed as a "joint venture in the service of the global environment." The agreement focuses on two of the President's major initiatives—volunteerism and the environment.

Beginning in January many of our PCVs will be trained by the EPA to deal with a full range of environmental challenges—water pollution prevention, waste disposal, reforestation and pesticide management.

"Armed with greater knowledge about our environment, Peace Corps Volunteers are going to help spread the word in the developing world. They will work to stop pollution before it starts and to ensure that economic development and environmental stewardship go hand in hand," President Bush said.

EPA's Reilly said of the agreement, "Combining EPA' s technical expertise with the Peace Corps volunteer network provides an ideal mechanism for sharing this country's environmental skills and offers another example of America's firm intention to provide environmental leadership internationally."

Currently we have about ten percent of our Volunteer force working in conservation programs to half deforestation and desertification, soil depletion and natural resource destruction. We have been one of the few international volunteer organizations offering natural resource assistance and have been involved in a variety of projects including environmental education, national park management, biological studies, wildlife management, agroforestry, forestry extension and forest management.

The first project under the Peace Corps-EPA initiative will be a pesticide management and safety training workshop for Volunteers in agriculture programs in the Inter-America Region. In January, Ecuador will host the pesticide workshop. Host country counterparts and officials will receive the technical training with our Volunteers.

In the spring, PCVs in Paraguay will receive EPA training in soil conservation and water harvesting techniques. Local farmers will also be included in the training.

A five-day pesticide regulatory workshop is set for May in Paraguay. Beginning in June, an intensive 12 week session is scheduled for PCVs on pesticide safety and management, soil conservation and water harvesting. During this time a one-week integrated pest management workshop will also be held for PCVs and farmers who use pesticides.

Later in the year, an environmental education and awareness training program will be conducted in Belize for park managers, archaeologists, Belizean Ministry of Education officials and primary school teachers. A waste disposal and management training course is tentatively planned in the Eastern Caribbean for host country officials and Peace Corps staff. We also plan to include a workshop in Honduras for Peace Corps staff and Honduran agriculturalists in watershed management and water harvesting techniques.

I feel very gratified to have been able to play a part in this pioneering program. It is tremendously significant in that it will have a direct impact on the people in the United States as well as in our host countries because the protection of the environment is everyone's concern. We look forward to expanding the program to the Africa and NANEAP Regions in 1991.

Paul D. Coverdell
Director
United States Peace Corps

Zartman Confirmed As Deputy Director

New Yorker Barbara De Castro Zartman was confirmed as Peace Corps' Deputy Director on Oct. 7 by the U.S. Senate in a rare Saturday session. (The Director and Deputy are the two PAS positions at Peace Corps. PAS means Presidential Appointment with Senate Approval.)

"Barbara is an individual who brings a wealth of talent and rich experiences to her assignment at Peace Corps. Her intellect, sense of humor and concern for others are the qualities which make her so well-suited for this important position," Peace Corps Director Coverdell said.

"When President Bush asked me to 'join' the Peace Corps, I had no hesitation. It fit in perfectly with my life," Zartman said. "I have dealt with international issues, particularly those confronting the developing world."

In her new role as Deputy Director, Zartman will focus on domestic issues in which Peace Corps is involved and help Director Coverdell in carrying out our American agenda which includes:

- Implementing the World Wise Schools program that will link our Volunteers with elementary and junior high classes to help improve young Americans' understanding of geography and other cultures.
- Working with national corporations and organizations to develop ways in which they can directly participate in Peace Corps' activities here and overseas.
- Redoubling Peace Corps' minority recruitment efforts.

"I look forward to working with Peace Corps Volunteers and staff to help fulfill the three goals of Peace Corps with a special emphasis on goal number 3—bringing the world back home," Zartman said.

About the cover

This Best Shot Photo comes from Liberia PCV Phillip Martin. "This is a society bush school girl. She has just completed her Kran schooling and has 'come out of the bush.' When they wear the white paint the girls are considered invisible. I wasn't sure if this girl would allow her picture to be taken and I was prepared to beg, plead or grovel. As it turned out, she was delighted to have her photo taken. I've been working with the Ministry of Education. My job has been to collect African folk tales, write them as children's stories and to illustrate them. They will be published and sent to Liberian schools so students will have reading materials appropriate to their culture. It's been a fun job!"

Peace Corps Times

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Dear *Peace Corps Times*,

As enthusiastic Volunteers, we are hoping you will be able to print a list of Peace Corps countries, the number of Volunteers, and the programs that each country hosts. We are familiar with the projects going on in the Sahel; what are the Volunteers doing in the rest of the world?!

Thank you,
PCV Laurie Hayden
PCV Tim Wilkins
Dosso, Niger

From time to time we do print a list of the countries and PCVs. If we don't get it in this issue, we'll try for the next one.

Dear *Peace Corps Times*,

A recent article in the March/April 1989 issue gives credit to some Returned Peace Corps Volunteer groups for participating in the Peace Corps Partnership program. I am sure that you were just giving examples, not a comprehensive list.

Nevertheless, I would like you to know that, quite on their own, two RPCV groups have supported my work here at Advanced Teacher Training College, for which I am very grateful.

The Los Angeles Peace Corps Service Council through the Yamanaka Peace Corps Memorial Fund, contributed $100 for the purchase of a portable hand-operated sewing machine for the A.T.T.C. Junior Secondary School Home Science classes. (There had been only one machine for 20 girls previously.)

The Returned Peace Corps Volunteers of the Pacific Northwest contributed $60.00 to pay mailing costs of Psychology, Counseling and Sociology textbooks collected by the Humanist Association of Salem, Oregon, for our college library. They were first used by five of us to prepare our lectures and have now gone to the library for use next year by students.

RPCVs are a wonderful resource to those of us still in the field. I hope other groups will follow the fine example of the two who have helped A.T.T.C. and me. My special thanks to LAPCSC and RPCVPNW!

Mariana D. Bornholdt
PCV Ghana

Dear *Peace Corps Times*,

In November 1988, the Volunteer Advisory Council of Togo hosted the first Africa Region Volunteer Conference (ARVC). Volunteer representatives from Benin, Ghana, Mali, Morocco and Togo met in Togo to discuss Peace Corps policies, focusing primarily on the plans for expansion through the Leadership Through Peace campaign. All Africa nations were asked to send representatives but funding proved to be a major problem. Instead, a questionnaire was used to acquire information from Burundi, Chad, Gabon, Niger and Swaziland. These concerns were addressed during the conference.

The object of this conference was twofold. First—to provide Peace Corps/Washington with volunteer-initiated grassroots feedback and second—to give constructive suggestions for country specific problems. The response from Washington from Loret Ruppe, Carroll Bouchard and other notables in Planning and Policy Analysis, Volunteer Recruitment and Selection, OTAPS and Experimental and Special Programs was quite positive which encouraged us to plan a second conference.

(*Continued on page 12*)

United States Peace Corps

Peace Corps' overseas operations are administered through the three regions: the nations of sub-Saharan Africa; the Central and South American and Caribbean nations comprising Inter-America; and the nations in North Africa, the Near East, Asia and the Pacific, or NANEAP.

	Africa
79	Benin
216	Botswana
30	Burundi
151	Cameroon
8	Cape Verde
107	Central African Republic
24	Chad
9	Equatorial Guinea
96	Gabon
52	The Gambia
102	Ghana
45	Guinea
12	Guinea-Bissau
242	Kenya
102	Lesotho
163	Liberia
139	Malawi
178	Mali
83	Mauritania
145	Niger
20	Rwanda
111	Senegal
153	Sierra Leone
82	Swaziland
54	Tanzania
105	Togo
188	Zaire

	Inter-America
127	Belize
235	Costa Rica
215	Dominican Republic
214	Ecuador
283	Guatemala
410	Honduras
166	Jamaica
202	Paraguay
176	Eastern Caribbean
	(Leeward Islands)
	-Antigua/Barbuda
	-Dominica
	-St.Kitts/Nevis
	-Montserrat
	-Anguilla
	(Windward Islands)
	-Grenada
	-St. Lucia
	-St. Vincent/Grenadines
	-Barbados
	-Carriacou

	NANEAP
11	Comoros
	Cook Islands
75	Fiji
13	Kiribati
33	Marshall Islands
81	Micronesia
177	Morocco
189	Nepal
12	Pakistan
22	Palau
79	Papua-New Guinea
369	Philippines
16	Seychelles
64	Solomon Islands
18	Sri Lanka
245	Thailand
41	Tonga
89	Tunisia
1	Tuvalu
56	Western Samoa
60	Yemen

Peace Corps Volunteers: Pioneers In Conservation

Scattered throughout western and central Honduras, on the tops of high, steep mountains, there still remain islands of cloud forest, so named because they are often enshrouded in thick clouds. They stand isolated, in retreat from the ever increasing demand for firewood and land for growing corn and beans, coffee, sugar cane and cattle. They are shrinking caps of green on balding mountains like monks' heads whose hair is cut daily with smaller and smaller bowls. It is a tragedy, and it is hurting Honduras. But there are people who would change all this, and are working hard to make that change. Peace Corps/Honduras is a group of such people, and in a variety of ways it is seeking to rewrite what could be the final chapter for wild areas in Honduras. The diverse nature of Peace Corps programming allows a multi-faceted approach to the problem of environmental degradation. Realizing the important role that conservation must play in the effort to achieve sustained development, volunteers from various sectors are working in a variety of ways to protect remaining forests and make the people of Honduras more environmentally aware.

PCVs, then in training for forestry sector, examine a protected watershed that provides water for Honduras' capital city, Tegucigalpa. Seated is Trainer and Honduras RPCV Scott Ludwig. Standing (l to r) are PCVs Stuart Campbell, Christina and Roy Simpson.

Honduras is a mountainous country, some 80% of which is covered with steep slopes that climb to 9,000 ft. This isolating terrain, combined with a lack of recent volcanic activity to enrich the country's poor soils, has hindered Honduras' development. Poverty and a high population growth rate create increasing pressure on the remaining wild areas left. Poor farmers, with no other land to cultivate, must try to farm on the steep slopes which are marginal at best for sustaining agriculture and are the last refuge for what remains of Honduras' wildlands.

In the dry season, Honduras burns. A gaze in any direction will bring to view plumes of smoke rising from once forested land. The land will be farmed for only a few years until the nutrients wash away from the unprotected soil. The smoke darkens the sky, reducing visibility to the point where airplanes cannot fly.

Except for the sparsely inhabited Mosquita region in eastern Honduras, the once abundant wildlife in the country has all but disappeared. Gone from most of the country are jaguars, monkeys, wild pigs, macaws and many other endangered species. Despite this bleak outlook, there is reason to hope that Honduras can save some of its remaining natural areas. Interest in conservation is growing, and real efforts are being made to protect specific areas as national parks, biological preserves, or wildlife refuges.

Honduras APCD for natural resources Jorge Betancourt, a native Honduran and also the current President of the Honduran Ecological Association, is perhaps the most experienced and involved proponent of conservation in the country. He worked for Honduras' Agency for Renewable Natural Resources (RENARE) when the first volunteers in wildlands management were assigned. "I was fortunate to work with at least five PCVs between 1974 and 1981, and would say that I am a product of their education and effort here in Honduras. I had the opportunity to learn more about a field, conservation, in which I didn't have much background. I knew that it was in me. I only needed someone to nurture the special interest that I had." Betancourt, who has been involved in conservation in Honduras from its beginning, attributes a major role to Peace Corps. "The history of conservation in Honduras goes along with Peace Corps' involvement in conservation in Honduras."

The pioneering Volunteers in wildlands management found the field wide open for them; there simply was no work being done. Former wildlands PCV Dennis Glick, who went on from his service to work for CATIE, the Center for Tropical Agriculture, Training, and Research, and lately for the World Wildlife Fund, remembers, "My Peace Corps experience in Honduras afforded me the opportunity to participate in an incredible variety of conservation related activities, from environmental legislation and education to pollution control and monitoring to parks establishment and management." Early wildlanders, like Glick, proposed Honduras' pilot national park (La Tigra National Park near the capital, Tegucigalpa, which provides 40% of the city's water) and organized wildlands' inventories. The results of these inventories provided the key information for the passing of a bill in 1987 declaring 37 natural areas in Honduras as national parks or biological reserves.

Creating a park

This legal declaration by the Honduran congress was a landmark step but the law simply created the parks without creating an institution to administer them and enforce their boundaries. Few people, besides the small number of conservationists interested in the issue, had any notion of their existence, least of all the campesinos that lived in and around them. The parks existed on paper but were in fact no better protected than before. Seeing this, the natural resources sector assigned Peace Corps Volunteers to sites near the parks to begin the organization and planning needed to provide some protection and promotion for the areas. Volunteers received in-service training in wildlands planning, and were then charged with the difficult task of capturing the interest and support of the various agencies and individuals that in some way had influence over the parks.

The job for wildlands planning Volunteers seems monumental at the onset. They must enter an area with little or no knowledge of their park's existence and create within the people a respect for the forest and a desire to protect it. Wildlands Volunteer Shelly Bowne explains this special challenge. "The Volunteers need to inspire

PCV Benjamin (Jamie) Wimberly from Ohio learns how to use an A-Frame level, an appropriate technology tool for measuring the slope of a hill. It is used to mark contour lines as guides for digging soil conservation structures.

trust and confidence in themselves. They've got to convince local extension agencies that rarely work together to cooperate in an unconventional effort. They need to appeal to their counterparts' love for their country, their natural heritage, as well as convince them that the parks are necessary because of their economic benefits." Peace Corps Volunteers are just the people to succeed in this difficult job. Their enthusiasm and devotion is contagious.

The efforts of Peace Corps Volunteers and their counterparts have already brought about the creation of operative plans for seven parks, and Volunteers are now working towards that goal in twelve more wildland areas. These operative plans lay out a schedule for the completion of tasks such as delineation of park boundaries, environmental education programs in schools, fundraising events, soil conservation projects, training of park rangers, and many others. "The exercise has been very constructive," says Betancourt. "It has improved the working relationship among host country agencies and increased participation of local individuals. They start to feel a part of the management of the area, that they have an input, and therefore that it is theirs as well. In this way I think the Volunteers are playing the appropriate role, and in the long term are working themselves out of the job."

PCV Bruce Gunn works on Celaque National Park in western Honduras. The fact that he is the second Volunteer assigned to the park, underscores Peace Corps Honduras' determination to continue placing Volunteers in national park sites until they become self sufficient. Bruce's predecessor RPCV Peter Dederich, a wildlands planner by profession, organized the writing of operative plans for Celaque and other protected areas. Gunn's assignment was to organize the implementation of the plan which calls for such projects as the creation of an environmental education campaign and the creation of a park visitors' center.

Gunn and fellow PCV Chris Noble have overseen production of brochures and radio spots describing the mountain park and the benefits it provides for the people that live in its shadow. They and a group of education Volunteers have held workshops aimed at educating instructors how to teach environmental education. Also an experienced carpenter, Gunn has turned an abandoned hydroelectric plant into a center where school groups and tourists can go to learn the wonders of the cloud forest, and local small farmers can go to learn appropriate hillside farming techniques.

Gunn's philosophy on integrated ecological development reflects a growing realization in the world development community that conservation and development must go hand and hand. "When you consider," remarks Gunn, "that the mountain is mother to eleven rivers which supply water to well over one hundred communities, it is clear that this park is as much a development project as it is a conservation project."

Other Fronts

Wildlands planning is not Peace Corps/Honduras' only conservation effort. Currently there are 25 PCVs directly or indirectly involved in wildlands management and environmental awareness in Honduras. Forestry and agriculture Volunteers work with small farmers to build soil conservation structures. Soil conservation measures such as contour ditches and terraces prevent the devastating soil erosion that occurs on steep, deforested slopes in times of heavy rain. By preventing erosion and supplementing the organic material in the soil with mulching dead vegetation, a farmer's land will stay fertile. The farmer can remain on his land, so he won't have to move up into the forests to slash and burn new plots.

Volunteers working in engineering, irrigation and watershed management organize communities to set aside and protect large areas of land above their source of drinking water. This ensures that human and animal waste, agricultural chemicals, and soil erosion do not pollute the community's drinking water. Maintaining fresh water supplies is the main economic justification for preserving wild areas.

In 1986 Volunteers Jamie Schmidt and Sandy Mack (1985–87), in collaboration with the Honduran Ecological Association (AHE) and the World Wildlife Fund, created a program which combined the building of trails and bridges in La Tigra national park with environmental education. Similar to the Youth Conservation Corps (YCC) in the United States, the Amigos de la Naturaleza (AMINA) program gives teenagers from poor barrios the opportunity to live, work and learn in the unspoiled beauty of the cloud forest. The program combines hands on natural history field study with work brigade, and leadership training to instill a conservation ethic in the minds of the nation's future leaders. Plans are now being made to start new programs in other newly created national parks.

Wildlanders Paul Foster and Vince Murphy have been working to inspire interest in conservation on a national level and promote the eventual formation of a national system of protected areas. By producing a newsletter in Spanish that reaches over one hundred agency offices and individuals that work in conservation, they hope to add a national consciousness to the conservation effort that has for the most part been regionally focused. The newsletter, called *Siempre Silvestre* (forever wild), features editorials, project news, park profiles, schedules of events and anything of interest about conservation and environmental education. Articles and information are solicited from interested Hondurans who are anxious to publish their ideas but until now have lacked a forum. Foster and Murphy are

(Continued on page 7)

Wildlands Preservation: Why It Is Vital To

In Honduras, as in all of the developing world, preserving natural areas means finding solid economic justifications for their preservation. "I remember back in the 1970s it was difficult to demonstrate to politicians and decision makers the economic benefits you can receive from wildlands management and environmental education," says Betancourt. "Now in the 1980s the situation is very different. We have enough arguments, evidence, and data to prove that devoting the remaining pristine wildlands resources to a national parks system is the best and most economical use of those areas."

Promoting highland forests as "water" factories is the conservationists' most useful method of arguing for their preservation. Undisturbed forests filter pure water from rain and fog and channel it down to populated lowlands. The water seeps into the shaded soil, is stored there, and is slowly released, so that even in times of little rain there is a constant supply of clean water. If the watershed is deforested, there is less vegetation to absorb the water and prevent erosion. Water runs off the mountain immediately, taking precious topsoil with it. It is muddy and contaminated with parasites from human and animal waste. And when the dry season comes there is no stored water to be released. The people below suffer when the springs run dry.

Another economic benefit gained from preserving natural areas is ecotourism. Although the benefit is less obvious to the poor farmer, ecotourism can be an important asset in the effort towards sustained development. One only has to look at Costa Rica, one of Honduras' Central American neighbors, to see how ecotourism can supply much needed foreign currency to a developing economy. Costa Rica has set aside large areas of its territory as natural areas and has developed an extensive system of national parks. Tourists from all parts of the world fly in to see the lush forests and exotic wildlife that is accessible nowhere else. Millions of dollars are earned every year from the benign exploitation of Costa Rica's natural resources. And especially encouraging, is the fact that an increasingly large percentage of the park visitors are Costa Ricans themselves, appreciating the benefits of preserving their own natural heritage.

Honduras has a number of good examples of the importance of forested watersheds and the disaster that comes with their destruction. The most obvious is the current ecological disaster in the south of Honduras. A region that was once covered with tropical forest, the departments of Choluteca and Valle are now dry and sparsely vegetated. The duration of the dry season has increased and the people suffer through months of severe water shortages. Ask an older citizen of the south if things have changed and he will recall days when forest and game abounded, water could always be found, and a family could feed itself from the land. Today, many people are fleeing the south for other parts of the country. Ecological refugees can speak for the disastrous changes that must befall other regions of Honduras if all the forests fall to the axe and flame.

PCVs Chris Noble (behind left) and Bruce Gunn (right foreground) with counterparts from the many different agencies now working on the Park on an exploratory traverse of Celaque National Park. They are pictured standing on the summit of Honduras' highest mountain. Gunn hold a degree in Forest Management from Humbolt State University.

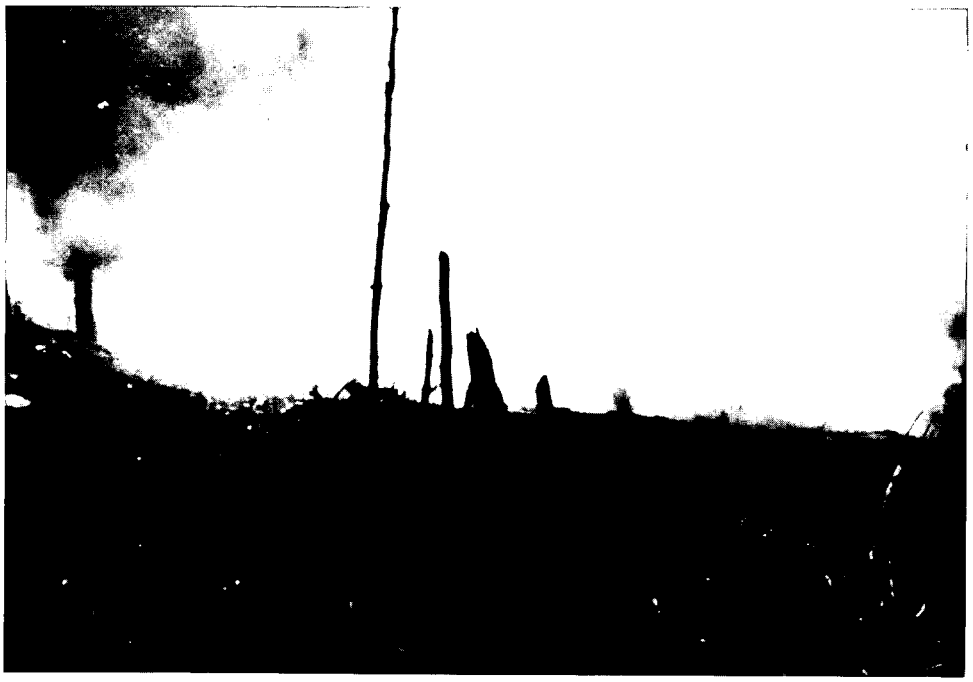
Another example is Honduras' hydroelectric power industry. Honduras provides for nearly all of its electricity needs with hydroelectric power projects, and it also receives needed foreign currency by exporting electricity to other Central American countries. Three large projects provide the bulk of the energy. Despite the economic importance of hydropower, little effort was put into the protection of the watersheds that provide water for the reservoirs that in turn feed the power-producing turbines. Wide scale destruction of the forests in the area due to the pressures of migratory agriculture and cattle grazing have resulted in heavy erosion of the naked hillsides. This erosion is silted in the reservoirs, displacing the water needed to turn the turbines. As a result, one plant has shut down and another, El Cajon, the largest and most productive, has lost much of its originally planned lifespan.

In the south a battle rages over the use of the mangrove swamps that once lined the calm Pacific coastline. The dispute pits shrimp farmers, salt producers and cattle ranchers against the area's fishermen. Shrimp farmers cut down the mangroves to dig shrimp ponds. Salt producers take out mangroves to put in seawater evaporation ponds. Cattle ranchers strip away the trees to provide pasture for their cattle. And the fishermen are seeing their harvests reduced with each acre of mangroves that is cleared. The problem is more than just the destruction of an endangered ecosystem. It is also the destruction of the fishing industry that depends on the mangroves for its existence.

Mangrove trees stand tall above the tidal swamp on top of a tangled latticework of roots that are alternately exposed and then covered by sea water with the tide's ebb and flow. The sheltering roots and calm water create a protective environment that is for many creatures, including shrimp and commercial fishing species, the site of their reproduction. By breaking the reproduction cycle of many fish, the continuing destruction of the mangroves has caused a great decline in the harvests of many fisherman that fish with hand lines from small boats and canoes.

The fishermen are organizing to fight further development of the mangroves. They face powerful opposition from the shrimp export industry who, ironically, have cut

Sustained Development



Honduran boy runs through a burning field.

themselves off at the ankles. Having destroyed the shrimp breeding grounds, they must import more and more from the U.S., Mexico and the Orient.

These are but a few examples of how the fates of developing nations are inextricably linked to the well being of their environments. Nature can take just so much before she refuses to give what we depend on for our very lives. Those of us working in development must realize this. Development is worth little if it is not continual, and in the end it cannot last without the basic natural resources that wildland areas provide. Conservation is indispensable to sustained development, and must be considered in all aspects of our planning. With a lot of thought and effort we can get the best of both the developed and the natural world.

Vince Murphy

Honduras Conservation

now working to turn the production of *Siempre Silvestre* over to a Honduran agency.

In February of this year wildlands management Volunteers, their counterparts and representatives of national and international development agencies gathered for the First Annual Conference on Wildland Areas in Honduras. The conference, sponsored by Peace Corps/Honduras and the Honduran Ecological Association and funded by the Office of Training and Program Support of Peace Corps/Washington, brought together professionals to discuss the plight of wildland areas and devise strategies for their conservation. It was the first time that concerned professionals had gathered to talk about conservation from the point of view of a national effort.

On the eve of the conference's closing, members collaborated in writing the Cry of Jícaro Galán, named after the site of the conference in the ecologically devastated southern region of Honduras. The document, signed by all participants, called on the government of Honduras to make conservation of wildland areas a priority. It petitioned the government to comply with international treaties protecting the flora and fauna, to redouble its efforts in conservation through its extension agencies, and to create an institution charged with protecting the 65 legally designated wild areas in the country.

Peace Corps/Honduras has made environmental education a priority program. At their conference in San Jose, Costa Rica in late 1987, Inter-America Region Country Directors declared Environmental Education a major program initiative. The goal of this initiative is to develop and strengthen an environmental ethic in the hemisphere through the extension of PCVs in their many fields of endeavor. Honduras Country Director Peter Stevens, who has worked in Latin America and the Caribbean for the last 33 years and has seen the devastating effects of environmental degradation in developing countries, first suggested the initiative at the Director's Conference. Says Stevens, "The destruction of natural resources in Latin America has and will have negative effects on the well being of its people. Educating people to the seriousness of this problem is very important. Peace Corps/Honduras has pioneered program effort focusing on this environment initiative." Environmental Education Volunteers are working with Honduran agencies to plan a national environmental education campaign. Most importantly, they have also developed programs for Peace Corps pre-service training that teach future Volunteers about the environmental problems facing Honduras, and what they can do to promote conservation in their work, regardless of their sectors.

A healthy conservation movement is a diverse one, approaching environmental problems from all angles. This is also true of a healthy development movement. The condition of a country's natural resources affects its health, food production, income, and indirectly all other needs that development addresses. The Peace Corps is involved in nearly all aspects of development and is thus in a unique position to address the challenge of conservation in the developing world. Peace Corps/Honduras is meeting that challenge with diligence and creativity. Through their energy and enthusiasm Peace Corps Volunteers in many sectors are getting the ball rolling and then stepping back and watching it gain speed. Wildlander David Beam considers his role that of a catalyst. "My goal has been to set them on fire. If they catch fire they can do something with that fire." It is working. Pockets of a new, benign fire are breaking out all over the country. It is spreading, one day to consume the entire nation, and when the smoke clears, instead of charred stumps we'll see a country richly green and a people committed to make it stay that way.

PCV Newsletter Editors

A brief reminder that the *Times* wants to receive your newsletters. Several of you we hear from regularly. Some newsletters we never see. The *Times* likes to reprint articles from your newsletters but we can't unless we see them. Please send them **DIRECTLY** to Peace Corps Times, 1990 K. St. NW, Washington, D.C. 20526.

Minnesota PCVs

Looking for a job? Going back to school? Don't know what you'll do? We have some material which may help you. Contact the Career/Support Committee at:

MN Returned Peace Corps Volunteers
P.O. Box 64B
Minneapolis, MN 55406

Best Shot Photo Contest

The Best Shot Photo Contest, despite the absence of prizes, continues to thrive. And, the pictures are getting better and better. We still are partial to pictures of PCVs with their host country friends and co-workers, although we don't get too many of them that are of reproduction quality. The best ones lately have been those focusing on one central character. If you enter the contest, be sure to write your name and address on the back of the photo. And, if you COS within the upcoming six months (of when you send the photo) include your U.S. address.

From **Steven Bell** in **the Yemen**—Nick Arnis and I set out into the Yemeni countryside toward the mountain top town of Shahara in North Yemen's dusty, arid brown Kamir region. We wanted to visit a 500 year old stone bridge connecting two mountains near Shahara. We eventually reached the bridge and what a spectacular piece of architecture it was. After hitching rides in the back of trucks for much of our journey, we ran out of rides and had to go on foot. As we walked we came upon many friendly and interesting men dressed in normal Yemen tribesman garb consisting of a knee-length zennah dress, a jambiyyah dagger, a suit coat, a head cloth called a mashetta and either a Russian or American made rifle. Many of the tribesmen from the north carry guns. They carry them not to hurt people but as a sign of masculinity. I am not afraid when I see a man with a gun here and have grown quite used to seeing it.

The two tribesmen in this picture with me were very friendly and nice. We enjoyed visiting with them very much. I like to refer to this picture as my Three Wise Men picture. What do you think? Should we follow the star together? The photo was taken by Nick Arnis. Nick works in the old city Sana'a as an urban planner. I teach English to Yemeni Civil Servants at the National Institute of Public Administration in Sana'a.

Notes from PCV **Dave Williams** in **Nepal**—My wife, Ann, and I are in the middle of our second year of service. We work for the Western Regional Livestock Service Office in Pokhara. Our project has been centered around dairy livestock (cattle and water buffalo) research and extension plus milk-marketing activities. We're both from Wisconsin where we hope to settle after our return trip through Southeast Asia, Australia and New Zealand.

From **Ghana—Richard Geist** sent this photo of himself, taken by one of the queen mother's granddaughters. Richard is being carried in a ceremony in which he is made a type of chief called a Safohen, the chief of an Asafo company in the village of Ekumfi-Ebiram. "My association with the village is a result of my friendship with members of the royal family who live in Winneba. I was honored because of my interest in helping the village in its development work." Geist

"Second Prize"—a Nepal farmer, her son and prize-winning murrah water buffalo at the Western Regional Livestock Exhibition in Pokara, Nepal. Photo by PCV Dave Williams.

From Steven Bell in Yemen. He calls it "The Three Wise Men."

Richard Geist in Ghana is pictured in a ceremony in which he is made a Safohen.

A Philippine Basket Vendor from James Metz.

served his tour as a physics teacher at the Advanced Teacher Training College in Winneba. After he COSed this past summer, he planned to stay on for a year with the Ghana Educational Service.

From the **Philippines—James Metz** offers this classic photo of a basket vendor. Metz is a trainer of math teachers in Balete, Aklan and has extended for a third year.

Another **Nepal** Volunteer, **Elisabeth Spector** sent us this outstanding picture which she calls, "Millet Harvest." The photo is of her host country "sister," Tekmaya, one of her 7th grade students. "I took this picture at my old post, Aowla, a picturesque village tucked into the foothills of the Himalayas. Everyone there is friendly. To get to Aowla, you have to climb uphill two hours on steep steps carved into the hill. Other PCVs who visited me call them 'the stairs to heaven,' because Aowla is such a serene place. Regretfully, I had to move because I was a teacher trainer the second half of my tour and Aowla was too remote for a training base." Elizabeth is a graduate of Rutgers College.

"Millet Harvest" from Elisabeth Spector in Nepal.

Tok, Tok, Tok—Sound of the Friendly Islands

"Tok, tok, tok . . . wherever you go in Tonga you hear the tok, tok, tok of women beating the paper mulberry plant all day long. In Tonga a woman can have a million dollars, but if she does not possess a large tapa cloth (around 10 feet by 80 feet) she is considered very poor," said Carrie Loranger, PCV/Tonga. The women of the villages work together to produce tapa cloth that is used every day as blankets, table cloths and clothing, and also for traditional ceremonies, such as births, weddings and funerals, and as gifts for honored guests and visitors. Worn tapa is saved for use in times of sickness, general wrapping purposes and as wicks for starting fires.

Tapa is made from the bark of the paper mulberry plant. The bark is placed in water and covered with leaves to retain moisture until time to separate the bast (the fibrous material) from the bark. After the bark is pried away from the bast, the bark is discarded and the bast is soaked again. The next step is the scraping, which removes any bark that remains on the bast. Excess water is forced out of the piece to prepare it for beating. The beating of the mulberry bast allows the strip to gradually widen. After it has been beaten to the desired thickness and width, the women spread the sheets and gently stretch them and then allow them to dry thoroughly.

The gathering of women to make tapa cloth is similar to the rural American tradition of quilting bees. The women come together to benefit from each other's skills and to enjoy each other's company. It is a tradition that is passed down from mother to daughter, generation after generation.

The transformation of the bark of the paper mulberry plant into a workable piece of tapa is very time consuming. "After the women collectively have enough strips of cloth they all come together for the gluing and dying process," said Carrie. "The strips are glued together with manioc (cassava) and placed on a press about three meters long. The women use rags to spread the reddish-brown dye, which is made from the bark of the koka tree, over the cloth which is carefully placed on top of the press. Each square of the press contains a different design. After the brown dye is complete, a darker dye is hand painted to outline the images. The finished product is usually stored under a mattress or slept on directly to keep it flat until the next funeral, wedding or birthday."

Lesley Twiss

Photos———Carrie Loranger

These are Tongan women making tapa cloth in the village of Leimatu'a in the island group of Vava'u. They are using rags to spread the koka dye over the cloth to catch the impression of the press.

The women are seen here rolling up the cloth that has already been dyed so that they can glue on more strips of undyed cloth.

The RVS Lounge

On the ninth floor of 1990 K Street NW, in the center of downtown Washington, D.C., you can always find a group of Returned Peace Corps Volunteers hard at work on job searches. What is the attraction? The Returned Volunteer Services lounge.

The RVS lounge is available to recently-returned PCVs and current PCVs. The lounge itself is actually three rooms. The first room contains a file cabinet with catalogues from different colleges, various bookshelves with job vacancy directories, two large bulletin boards with job postings and a copier. In the second room, there is a bulletin board with housing information and several cubicles equipped with telephones and typewriters. The third room is a small lounge area.

Usually there are four or more returned Volunteers using the lounge every day. During lunch hour, the lounge is especially busy as many RPCVs who work close by come in to make a quick phone call or check for new job postings.

I have been using the Peace Corps lounge myself since I relocated to Washington, D.C. in March after finishing graduate school at Thunderbird in January. My first day in D.C., I made an appointment with Nedra Hartzell, the career counselor for RPCVs (whose appointment book may also be found in the lounge). Nedra showed me the lounge and also gave me information on an International Career Day which was held the following week at American University.

Soon afterwards the lounge became my "office" as I used the typewriters to type numerous 171s and the phones to track down job leads. While doing my job search in the lounge, I met many lounge regulars who had been at the job search before me and whose advice was invaluable. For example, Shaun Hamilton, RPCV/Niger /86-88 and an expert on non-competitive eligibility, gave me advice on writing cover letters to Federal Employers explaining what non-competitive eligibility is. Megan O'Donnell, the former *Hotline* editor, also patiently reviewed several drafts of my resume.

Recently, I interviewed several RPCVs in the lounge who represent Volunteers from a variety of countries and in various stages of reentering the job market.

Michael Conricode, RPCV/Morroco/86-88, was using the RVS lounge for the first time. Although Michael returned to the U.S. in October of 1988, this was only his second day in Washington, D.C. Michael is interested in urban redevelopment and planning. So he found the directories with job postings from HUD very helpful.

Charlene Spale, RPCV/Paraguay/81-83 and Yap, Micronesia/87-89, is also relatively new to the lounge. After returning in April 1989, she immediately started her job search. Charlene's goal is to get a job in an environmental education center, similiar to the job she did in Peace Corps. She found an environmental jobs bulletin in the lounge which gave good job leads, and she is using the typewriters to follow up on these job postings.

RPCVS using the Returned Volunteers Lounge in June—Charlene Spale (Paraguay and Micronesia), Dan Scheinman (Niger), Michael Conrcicode (Morocco), Kelly Weseman (Mauritania), Abby Bronson (Mali), Gayle Longest (Costa Rica) and Kim Green (Western Samoa).

Dan Scheinman, RPCV/Niger/86-88, and Casey Bars, RPCV/Philippines/81-84, have been using the lounge off and on for a few months. Dan took a year off to do carpentry and painting in Morgantown, West Virginia when he returned to the U.S. Recently, he came to Washington, D.C. to look for work in the non-profit sector dealing with social justice, and he has applied to Save the Children. Dan finds the RVS lounge a good place to network, find other Volunteers, and locate information on jobs. He frequently uses the international job directories and intern directories in the lounge.

Casey feels that one of the main advantages of the RVS lounge is its convenient location in downtown D.C. A RPCV can come to the lounge, work during the day, and get to other appointments in D.C. easily. In addition to using the RVS career counseling services, Casey also visited the Peace Corps Congressional office nearby. There he was able to get a list of RPCVs on Capitol Hill which contributed to his search for a job in foreign affairs.

Kelly Weseman, RPCV/Mauritania/86-88, and John Hartman, RPCV/Mauritania/86-88, ran into each other unexpectedly in the lounge.and spent time catching up on friends and events in West Africa. John was on his lunch break from his job at a local bookstore and stopped in to check the job postings and use the phone. John finds the job postings board helpful and he checks the *Hotline* (also available in the lounge) on the day it comes out. He feels that the job postings offer a lot of opportunity for those interested in a government job. In the fall, John will be going to Auburn with an assistantship he found through the *Hotline*. He wants to work in sustainable agriculture in the developing world.

Kelly has been back in the U.S. nine months, but she has only been in Washington, D.C. since February. She is teaching English and looking at job and study possibilities. Kelly takes advantage of all the lounge facilities, especially the job board. Although she is teaching English, Kelly wants to get a job with a consulting firm in Africa. She recently interviewed with an organization for a program assistant position. For Kelly, the most helpful resource in the lounge is the job board. Employers who post jobs there are seeking to hire RPCVs, and she finds that Peace Corps often has a link with these employers, i.e. RPCVs work there. She feels this is a unifying force. The lounge also offers Kelly an opportunity to talk with other RPCVs who have done similar work and to find out more about jobs they are doing in fields that she is interested in.

Some RPCVs, like Kim Green, RPCV/

(Continued on page 12)

Is There A Fulbright In Your Future?

Several RPCVs have reentered the world of academia on their return to the United States, concentrating on interests in international studies—often related to their Peace Corps experience—in graduate school. After a few years of hard work, some have been rewarded for their efforts with a Fulbright grant, allowing them to spend one year of their studies overseas. The majority of these grants, for which competition is stiff, are awarded to advanced graduate students to be used in researching a doctoral dissertation, or to university-level professors.

The idea behind the Fulbright grants is similar to that which guides Peace Corps: "to enable the government of the United States to increase mutual understanding between the people of the U.S. and the people of other countries."

RPCV Lewis Greenstein's attachment to Kenya didn't end with the close of his tour there. He returned to the US as a graduate student of history at Indiana University, focusing on African studies. His absence from Kenya was not a long one; under the auspices of a Fulbright grant, Greenstein returned three years later to research his dissertation on African soldiers in the British Army during World War I. His career in the academic world, revolving around his interest in Africa, has included teaching and administrative positions at collges in Pennsylvania and Washington and his recent position as Educational Institutions Liaison at Peace Corps' Washington office.

Like many RPCVs, Greenstein did not envision his commitment to Kenya ending after his tour was over. Through the Fulbright program, he was able to enhance his graduate studies with further overseas experience. Kenya is one of the many countries involved both with Peace Corps and with the Fulbright program. Over half of the countries welcoming Peace Corps also host students and professors conducting research through the Fulbright. Eastern and western European nations such as Hungary, Poland, USSR, England, France, and Germany are locations for grant study as well.

It would be a rare instance, Greenstein cautions, for a PCV to receive a grant immediately upon returning to the US. Most often, the awards are restricted to students with at least beginning level graduate work behind them. However, openings vary by country, and a limited number of grants are available to college graduates holding only a BA at the beginning of their grant period.

For the latter, the year of study will be somewhat like returning to college, involving lectures and study at a host country university. Independent research and supervised field work will be the focus of a degree candidate's year. (Note: in most cases, the degree must be earned through an American university, as most overseas degrees cannot be earned in the one year covered by the grant.) For RPCVs with a masters or PhD, some countries do offer grants for a year of independent research.

Teaching assistantships are offered in Afghanistan, Ecuador, France, and Germany, where candidates teach a variety of subjects to high-school age students. College-level professors may spend the year teaching at a host country university. Countries such as France and England offer over fifty such positions, all of which are highly competitive. Countries such as Zaire offer fewer positions but are less competitive.

Since there is such wide variation in the programs available in different countries—including language proficiency requirements, recommended fields of study, and the necessity of applying directly to host country universities in some countries—the best way to learn about specific countries of interest is to sit down with a Fulbright pamphlet and carefully study the opportunities offered in that country. Fulbright applications must be made for only one country; the program of study or research must be designed with that particular country in mind. Candidates may not enter separate applications for more than one country.

Fulbright grants offer not only the opportunity to work and study abroad but substantial financial benefits as well. A full grant includes round trip transportation, tuition, books, living expenses for the full year of study, and limited health and accident insurance. Fixed sum grants are given in American money in an amount equal to that covered by a full grant (fixed sum grants are used for study in countries where there is no Fulbright Commission/Foundation). Travel only grants are available as supplements to non-IIE grants or to supplement students' own funds for study abroad.

Basic eligibility requirements include U.S. citizenship, a BA or the equivalent, and most often written and spoken proficiency in the language of the country where the study will take place.

Information and guidance sessions for anyone interested in applying for a Fulbright grant are held at the headquarters of the Institute of International Education in New York City several times a year.

Some USIS posts may have the Fulbright pamphlets in their offices. If not, they can acquire them for you, or you can write to: U.S. Student Programs Division, Institute of International Education, 809 United Nations Plaza, New York, NY 10017-3580 for further information and application forms.

Brooke Smith

RVS Lounge

Western Samoa/80–82, use the lounge infrequently. They may come by just to make a copy of job search information or a phone call to prospective employers.

So what is the most important thing that volunteers need to know about the RVS lounge? Perhaps, just that it exists and that its resources are available to RPCVs. Michael commented that if he had known all these resources were available, he probably would have taken advantage of them nine or ten months earlier. Moreover, Nedra and Megan are wonderful sources of information. They can provide the RPCV with a perspective on the RPCV job scene and possible job leads, especially in development and government work.

But most important of all, the RVS lounge offers the returned Volunteer a place to meet other Volunteers and maybe even old friends. The welcome mat is out!

Gayle Longest
RPCV/Costa Rica/84–87

(*Letters from page 3*)

Plans are currently being made for the second ARVC, tentatively scheduled for April of 1990. We hope to see some widespread representation thus we are extending our invitation to current and returned PCVs from the Africa region. Not only will this increase the quantity of our feedback, but the quality as well.

Anyone interested in attending the conference or in relaying their ideas through a questionnaire should write to:

ARVC Committee
BP 3194
Lome
Togo

Copies of the report from the first conference are still available. Hope to see many of you in April.

Jennie Hughes
ARVC Chairman

Coming Attractions

There are many exciting articles planned for upcoming editions of the *Peace Corps Times*. We are working on photo features on the Yemen and Burundi. Also in the works is a story about a set of identical twins working as Volunteers in Costa Rica and Mali. Other features we are looking forward to are on new programs in Hungary and Poland.

Jobs in Ohio

The State of Ohio has established a clearing house for returned Peace Corps Volunteers who are seeking employment with Ohio state agencies. For more information write to: Director's Office, Ohio Department of Development, Box 1001, Columbus, Ohio 43266. Or you may call Rebecca Blatt at 614-466-3378, when you get back to the U.S.

Information Collection & Exchange

ALMANAC

Feature

At the Heart of Peace Corps—Appropriate Technology

According to Ken Darrow and Mike Saxenian, authors of the comprehensive reference, *Appropriate Technology Sourcebook*, "The appropriate technology movement is 'the art of the possible' among the world's poor . . . " to answer their basic needs for food, water and housing.

The tools and techniques the authors include under *appropriate technology* (1) require little capital; (2) use mainly local materials; (3) are relatively labor-intensive and productive; (4) are small-scale, affordable and adaptable; (5) do not harm the environment and (6) involve the local community in their design, production and use. They apply to just about every field, from agriculture, to energy, to transportation, to beekeeping. They include devices such as those mentioned in our *Networking* article that are professionally designed, as well as others that represent the ingenuity of poor villagers and city-dwellers who have no special training.

In countries as far distant as China and Colombia, according to Darrow and Saxenian, people with only an elementary education are being taught to become *barefoot engineers*. With special intensive training, they are learning basic principles of science and technology to help solve local problems when they return to their villages.

As appropriate technology embodies the spirit of Peace Corps—helping people in developing countries to help themselves—it is not surprising that Peace Corps Volunteers have tried many of the devices cited in the *Sourcebook*. Working together with villagers, they also have come up with some unusual and practical ideas of their own. In the January/February issue of *ICE ALMANAC*, for example, we described how a Volunteer working with women in a village in Mali made a millet grinder out of a coke bottle and a corn husker from a block of wood and bent nails. More recently, APCD Lynn Utall in Mali reported that several Volunteers have been working with local blacksmiths on a mechanism consisting of wooden pulleys with bicycle hub bearings, to draw water from wells. Previously, villagers imported metal pulleys, which were twice as expensive and not so durable.

Among Volunteers, the most common appropriate technology projects are those to improve cookstoves. Their popularity stands to reason, as food is such a basic need and improved stoves benefit everyone. They also can have a positive effect on the environment, as the article on the Dominican program in *From the Field* indicates.

This article points up, too, an interesting aspect of these projects. They naturally progress from producing a simple device that villagers make for their own use to a product that an artisan makes and sells. In the process, Volunteers find themselves engaged in *microenterprise development* as much as in *appropriate technology*, a pattern characteristic of the organizations described in *Networking*.

APCD Utall in Mali reports that now several Volunteers are working with Appropriate Technology International (ATI) and a local organization to help establish regional facilities for making irrigation treadle pumps. Other Volunteers in Mali are investigating products made from mangoes and the use of solar energy to preserve them. The potential of solar energy also interests Peace Corps in the Dominican Republic, and a Volunteer recently was sent to a conference in Miami on photovoltaics.

Put These on Your AT Reading List

For materials to help you with your project, consult the *Appropriate Technology Sourcebook: a Guide to Practical Books for Villages and Small Community Technology* (ICE No. AT033), by Ken Darrow and Mike Saxenian (See *Feature* article). If you are interested in any of the publications described in the *Sourcebook*, you have immediate access to them through the companion *Appropriate Technology Microfiche Library*. ICE has distributed the *Microfiche Library* to every In-country Resource Center (IRC).

Appropriate Technology, a quarterly publication of the London-based Intermediate Technology Group, can keep you abreast of latest developments in the field. ICE also makes this resource available, so check your local IRC.

Another of the Group's excellent publications is *Tools for Agriculture: A Buyer's Guide to Appropriate Equipment* (ICE No. AG041). This catalogue is geared to the needs of developing countries and contains drawings and diagrams detailing the use and design of each tool.

Of course the best resource for any Volunteer is *THE WHOLE ICE CATALOG*, which shows the comprehensive collection of publications related to *Appropriate Technologies for Development* available to Peace Corps Volunteers. Abstracts of ICE's more recent acquisitions can be found in this and other issues of *ICE ALMANAC* that have appeared since May 1988 when the *CATALOG* was last published. (A new edition of the *CATALOG* should be out in the fall of 1989.) Volunteers may find especially useful these manuals published by the Intermediate Technology Group, which were abstracted in the May/June 1989 issue of *ICE ALMANAC:*

Improved Wood, Waste and Charcoal Burning Stoves: A Practitioner's Manual (ICE No. AT008);

The Design of Bicycle Trailers, by Michael Ayre (ICE No. AT011);

How to Make Planes, Cramps and Vices, by Aaron Moore (ICE No. AT014); and

Technology Transfer: Nine Case Studies, by Sosthenes Buati (AT016). Another Intermediate Technology publication—*Running a Biogas Programme: A Handbook*, by David Fulford (ICE No. EN040)—is on order and will be available to Volunteers shortly.

PCVs working to improve the water supply in their communities also will be interested in two other publications abstracted in the May/June *ALMANAC*: *Renewable Energy Sources for Rural Water Supply*, by E.H. Hofken and J.T. Visscher (ICE No. EN001); and *Zig Zag Collector: Manual on the Construction of a Solar Water Heater*, by Bart Deuss (ICE EN005). Both these volumes were produced by organizations in the Netherlands.

Demand for food in impoverished countries is prompting Peace Corps to consider a number of new enterprises in the Agriculture Sector that can be integrated into appropriate technology. One is iguana farming. This large, ugly lizard, a delicacy for Central and South Americans, is becoming extinct. Peace Corps/Honduras has sent a Volunteer and her counterpart to Costa Rica to observe a Smithsonian-sponsored project to breed and raise iguanas, with a view to trying it in Honduras. So far, results show that in captivity, iguanas increase in both number and size because they are better fed and all their eggs are hatched. As they are an excellent source of food, iguana farming may motivate countries to preserve their rain forests, which are the iguanas' natural habitat.

In Benin, the German government is helping to explore the feasibility of raising cane rats (also known as grasscutters) for food production. A rodent very much like the guinea pig, the cane rat is found only in Africa, where its meat is highly prized. Earlier experiments have shown the cost of raising the cane rat to be too high, but if improved methods can make the business profitable, it may be another venture for Volunteers in the '90s.

When an appropriate technology project is linked to microenterprise development, training must emphasize business as well as technical skills. A study of the cookstove program in Guatemala, for example, found that although artisans knew how to make ceramic stoves, they did not know how to run a business. Most kept no accounts or records, did no marketing, knew little about how the stoves operated, had none on display to demonstrate for customers, and knew nothing about quality control. Appropriate technology projects such as these need Volunteers not only to help entrepreneurs produce a project but to guide them in running a business. Volunteers must be trained for this task.

Appropriate technology has many ramifications that need to be explored. The opportunities *the art of the possible* offers for the future are as far-reaching as the imaginations of Peace Corps Volunteers and the communities they work with.

Farmer-To-Farmer

The Farmer-To-Farmer (FTF) Program brings the expertise of American agricultural professionals to PCVs working in agriculture and related fields. Primarily, these agricultural experts serve as a resource for PCVs involved in primary or secondary projects that require short-term (30–120 days) technical assistance, but they also may serve as technical consultants to other Volunteers and host-country counterparts. These consultants are available for a range of projects from credit cooperatives to soil conservation.

The program is a collaborative effort: The in-country staff and FTF Coordinator/OTAPS review the PCV's project and request for technical assistance; Volunteers in Overseas Cooperative Assistance (VOCA) recruits the appropriate volunteer; AID funds the program.

If you are interested in having an FTF Volunteer assist your project, contact your Country Office or the Farmer-to-Farmer Coordinator, OTAPS, PC/Washington.

An FTF Example: Ben Thies is a water sanitation PCV who *had* a problem. Assigned to work with a community of tribal Filipinos in the heart of the mountain provinces of the Philippines, he became acutely aware of the problems farmers encountered in raising vegetables. Their dependence on high-cost imported fertilizers and insecticides had, over time, deteriorated the structure and texture of the soil—eroding profits as well as the mountainside. Compounding the problem, the farmers rarely coordinated the planting and marketing among themselves, resulting in frequent overabundance of certain crops, driving down prices below production costs.

Recognizing these problems but lacking the specific expertise to assist community members in properly addressing them, Thies requested the technical assistance of a Farmer-To-Farmer Volunteer (FTFV) for 60–90 days. On June 19th, Ken Bajema left for the Philippines as an FTFV. Bajema is an RPCV from the Eastern Caribbean, where he worked with small landholders, agricultural extension agents and farmers to evaluate soils, devise crop rotations, identify erosion problems and implement conservation practices. Bajema recently retired from the Department of Interior, Bureau of Indian Affairs, where he worked for over 20 years as a soil conservationist and natural resource manager.

Bajema and Thies are now working together to promote the use of low-cost, organic inputs, while educating farmers on the proper and efficient use of agricultural chemicals. In an effort to maximize the return to the farmer, they are reviewing the current harvesting and marketing practices and evaluating the profitability of growing other crops.

Ben Thies *was* a PCV with a problem; with the help of Farmer-To-Farmer, now he is part of the solution.

Do You Use a Computer? . . . . . .

The personal computer has become an important tool for people in more-developed and less-developed countries alike. Linkages between computers, telephones, radio and satellite communications systems are being used to help people communicate information to locations that were formerly *information poor.*

We know that many Peace Corps Volunteers are using computers to help them in their work. Some are using them to manage data about their projects; some are using them in schools and other educational settings in teaching classroom subjects. Some Volunteers who are assisting government ministries are programming their machines to perform functions necessary for the infrastructure of the economy; others are training local people to use the computers.

We know that there is a down side to computer use, too. Some people feel that working with computers is too impersonal, even dehumanizing. They also argue that a computer creates more work than it accomplishes and requires skills so different from traditional ones that it actually contributes to the problem of not enough appropriate jobs for people in developing countries.

What has your own experience been like? If you are using a computer in your work, we would like to hear from you, to help us feature PCVs and computers in a future issue of the *ICE ALMANAC.* We will be happy to receive either short descriptions of your work or full article-sized pieces. As always, we are interested in knowing not only the technical details of your project, but also how it affects and involves the local community.

Send all submissions to *ICE ALMANAC,* Peace Corps, 1990 K St. N.W., Washington, D.C. 20526.

Improving Cookstoves in the Dominican Republic

Peace Corps' Project

Peace Corps is promoting the use of an improved cookstove in the Dominican Republic—a ceramic stove, which should improve the quality of life for most Dominicans. It will help reduce the amount of firewood the majority of Dominicans consume and in doing so, help protect the country's forests. One characteristic of the stove is that it can be made by traditional artisans with materials native to the country.

The Problem

Approximately 80 percent of the Dominican population uses wood or charcoal to cook meals. With an area slightly less than 50,000 square kilometers and a population nearing seven million, the country's forests face severe pressure from settlers wanting cultivatable land, timber and firewood. As a result of this exploitation, lush vegetation has been lost. Since the beginning of the century, the percentage of the country's surface covered by forests has dropped from 80 to 12 percent. As the population grows—it is expected to double in the next 30 years—there will be an increase in demand for vital resources, prompting the search for new technology to deal with this dilemma.

The Technology

For the past two decades, Peace Corps has been interested in the technology for improved stoves developed by countries in Asia and Africa, whose severe problem of scarce fuel preceded the problem Latin America is now facing. Peace Corps' focus is on finding a technological alternative more efficient than the system of an open fire, or *fogon*, traditionally used. Though extremely simple and easy to make, the *fogon* allows much of the energy from the firewood (up to 90 percent) to escape.

The first generation of improved stoves were simple appliances made from local materials (usually clay) that channeled the heat from the firewood to the cooking receptacles. A good example is the Lorena stove, developed by a group of technicians from Guatemala and PCV Ianto Evans, who knew about the problems encountered in Africa. Study and evaluation of the Lorena stove demonstrated its potential and acceptance by Dominican housewives but also indicated the need for further improvements to restrict the amount of firewood required.

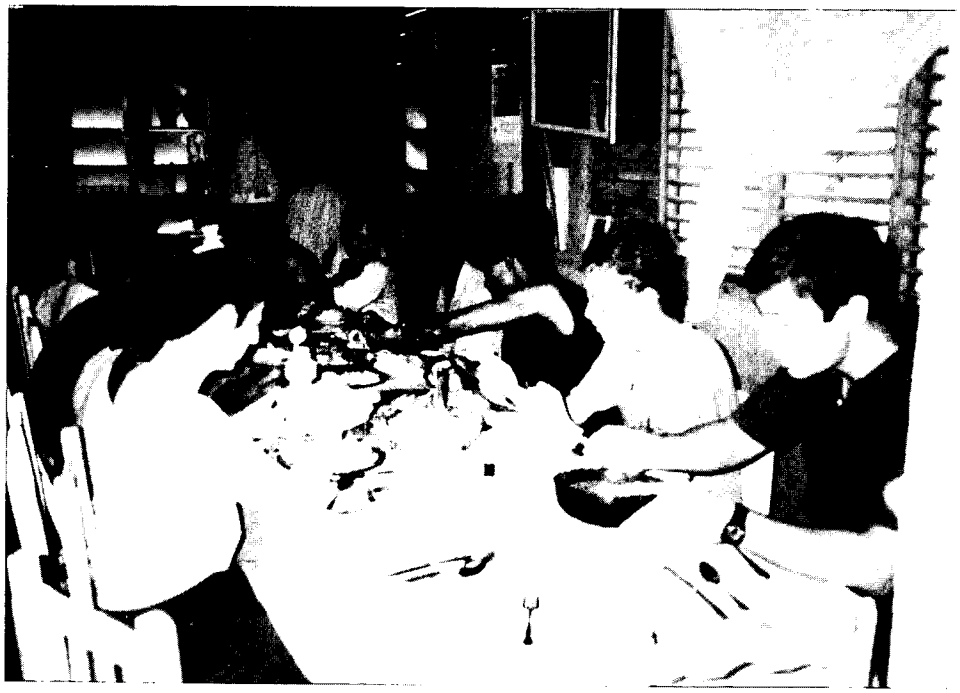
Now, a second generation of stoves is emerging, based on principles of having prefabricated, standardized parts, subject to quality control and made by local artisans with materials available in the country. The ceramic stove belongs to this group. Developed in Guatemala as part of the AID-financed project *Firewood and Alternate Sources of Energy*, the ceramic stove consists of a series of elements prefabricated from the same materials traditional ceramicists use to create bowls, planters and other popular items. Having Peace Corps/Guatemala involved in developing, evaluating and now distributing the ceramic stove, its technology and advantages have become known in the Dominican Republic through Peace Corps' Appropriate Technology/Natural Resources program.

The Ceramic Stove in the Dominican Republic

In June 1988, Peace Corps in the Dominican Republic, with help from OTAPS, conducted a workshop designed for Volunteers and their counterparts to study all aspects of the technology related to improved stoves. Engineer Mario Augusto Recines, a consultant from Guatemala, led the workshop. He also demonstrated and installed a model of the stove made in Guatemala. A group of women, ceramicists who live in Reparadero, a small community in the town of La Vega, were invited to attend this session. Their enthusiasm and the optimism of PCV David Jones, who works with them, led them to reproduce the stove. It was installed in several homes in the area and generated considerable interest on the part of the population in general.

These first positive results justified holding a workshop a year later specifically for ceramicists. The objective was to have them see how the basic concepts of production and quality control that apply to ceramic stoves can be adapted to fit the characteristics and needs of the Dominican Republic. Once again, the workshop was sponsored by OTAPS and conducted by Engineer Recinos in the home of one of the ceramicists, Altagracia (Doña Tata) Morena, who lives in Reparadero.

By this time, the women had sold 12 ceramic stoves to families who lived nearby. Seeing these stoves corroborated their advantages. Although these first models may have had a few defects because of the artisans' inexperience, the majority of the women interviewed approved of the new stove. They mentioned as its prime advantages:(1) security (accidents causing burns



OTAPS Appropriate Technology Specialist Jaime Henriquez (right, foreground) shares a typical Dominican "comida" with PCVs and Dominican artisans who participated in the workshop at Doña Tata's home.

Doña Tata (left, foreground) leads a group of Dominican artisans making ceramic stoves.

and fires are avoided); (2) speed (cooking takes less time);(3) comfort (the room is not overheated or smoke-filled); and (4) efficiency (requires less firewood).

The Future

Through the efforts of Peace Corps in the Dominican Republic and with technical support from OTAPS, the first step has been taken to consolidate the ceramic stove's technology in the Dominican Republic; nonetheless, a great deal remains to be done. The ceramicists need to gain experience in commercial production before the potential of these stoves can be realized and workshops established to produce them successfully. During this process, while they are mastering different skills, the artisans are very likely to be hesitant about their work. Peace Corps Volunteers can give them needed support, as well as integrate their efforts with a reforestation/environmental education campaign.

During the succeeding months, the most important task will be to help the artisans produce good, profitable stoves. Peace Corps/Dominican Republic also will be doing the necessary field work to outline a program for making the stove commercially appealing to Dominican housewives.

Considering that millions of Dominicans use firewood each day and that they constitute the target population, many institutions should be involved and take responsibility for promoting the project. Peace Corps will try to sensitize other institutions interested in the problem to coordinate efforts to expand the use of the ceramic stove.

Marcos Recinos
Alberto Rodriguez,
APCD/Dominican Republic

Translated from the Spanish
Cindy and Judy Benjamin

A Dominican artisan shows his skill at the potter's wheel.

Doña Tata Speaks Out

During the workshop for artisans in the Dominican Republic, OTAPS Appropriate Technology Sector Specialist Jaime Henriquez interviewed ceramicist Altagracia (Doña Tata) Moreno about her experience in making and using ceramic stoves. Here are some of her comments:

. . . This stove helps the housewife because it's more economical. It uses up less wood. I bought 25 pieces of wood the day before yesterday, and I still have enough left for three more days. With the *fogon* we had before, I would have burned more than 50 pieces by now.

. . . The new stove retains heat and isn't as dirty to use. It also doesn't stain the pots.

. . . You can roast chicken and bake something in the stove as well.

. . . It's as good as a gas stove, even better. When you're cooking with gas, when you finish, that's it. But with a ceramic stove, if you're not going to eat it right away, you can still keep the food warm an entire day by putting the pot in hot water on the stove. With beans, for example, after making supper, I can put them in a pot on the stove, leave them there overnight, and find them soft in the morning. This is more important to me than having a gas stove.

. . . There's less danger of fire with it. Even a little boy or girl can cook on this stove. There's no danger from it whatsoever. You also don't get hot cooking on it, and you don't get your hands dirty.

. . . I think that this stove, if we know how to make use of it, is going to be very successful here in our country.

. . . I don't know how much each piece costs to make because I use the clay I buy for other things as well. I have to pay for everything, and it's very expensive. When we have our own kiln, then the stoves will be cheaper, and we can even donate them to poor people who cannot afford to buy them.

. . . I don't want to make a lot of money. I want the community to benefit and have a better way of life.

. . . I'm hoping that in the future we can have a workshop where the women who are now making ceramic dolls and earning practically nothing can do what I'm doing.

. . . When we have a workshop, people will want to come see the stoves, because there aren't ceramic stoves anywhere else in the country. People will want to see what they're like, how they function. For that reason, I'm going to change the stoves I have now, the parts that have problems, and make them according to specifications. That's what I want to do.

. . . I'm very, very grateful that we've had this practice, this workshop, because now we can move ahead, and I don't think we'll fail.

Contributions from the Pax World Foundation

Editor's note: *These three articles are reprinted from materials prepared by the Pax World Foundation, a private voluntary organization described by staff member Kathleen Corbett as "supporting projects on behalf of world peace and the world's poor." The Foundation is financed largely through a mutual fund, which "invests only in socially responsible projects." Many of Pax World Fund's investors donate a portion of their profits to the Foundation, which has a total of about 2,500 contributors.*

Some 300 persons have participated in Friendship Tours, now in its fifth year. The Foundation started this activity as a way of "building bridges to peoples of adversary nations." These tourists have visited countries in the Middle East and Central America as well as Cuba and the Soviet Union.

Other activities supported by the Foundation include a Village Vitalization program, which secures individual sponsors for villages where other organizations have development projects underway, and five model farms "to develop self-sustaining agriculture for people from Third World countries." At the site in Hawaii, experiments are being conducted with the giant leucaena tree, a resource for reforestation described fully in a number of publications available through ICE.

Anyone interested in planting these trees and the vegetables described here can secure the seeds by writing to Pax World Foundation. We recommend, however, that Volunteers test the seeds first before distributing them to farmers in their host countries. The Foundation, too, would be interested in knowing the results of the tests.

Testing and feedback are particularly important with respect to the water purification device described in one of these articles. Invented by a Foundation director and engineering professor, Chris Ahrens, the purifier was originally tested at the model farm in Honduras, but the Foundation believes practical evaluation is essential and wants to hear from anyone building the device (see "How Do You Rate It?"). Volunteers may want to try it in a school or clinic.

Foundation staff recommends that the instructions be followed in sequence but recognizes that modifications may be necessary. The general principles as described in the article, however, are essential.

Anyone interested in obtaining copies of these articles should write directly to Pax World Foundation, 4400 East-West Highway, Suite 130, Bethesda, Md. 20814. A pamphlet on the water purification device is also available in Spanish.

The Buffalo Gourd
(Cucurbita foetidissima)

Almost a third of the earth's surface is semiarid, of very limited use to produce food for people or animals. For the past several years, however, plant scientists from the University of Arizona have been working to develop a gourd, used by the American Indian for 10,000 years, as food for millions of people and animals that try to subsist on marginal land.

The Buffalo gourd is a tennis-ball-sized vegetable, which requires minimal water to grow. It has hundreds of seeds from which a high quality vegetable oil may be extracted. The **seeds** contain 30–35 percent protein and up to 34 percent polyunsaturated oil.

Like the shaggy beast that roamed the North American plains, the Buffalo gourd can be put to a myriad of uses. The seed meal, left after the oil is extracted, may be ground into meal or flour for making flat breads or adding to soups or porridges. This residue also provides an excellent animal feed, comparable to soy beans. The **root,** which is enormous in size, sometimes reaching 40–50 kilos in two years, has recently been discovered to be an excellent source of alcohol fuel. Although an excellent source of carbohydrates, the root has not been developed as a food source because of its bitter taste. This bitterness also makes it unpalatable as an alcoholic drink. The **fruit** of the gourd has been used for centuries as a laundry detergent.

"Even in a small village, a simple mechanical press would be able to extract the oil," Dr. W.P. Bemis of the University of Arizona says, "and the fruit when added to washing water would be a boon to village women's washing chores." Dr. Bemis believes it is one of the few *food* plants that can be grown on semiarid land. It is also a rarity to have a plant that can provide both food and fuel.

Planting Instructions

Plant the seeds an inch or so deep, much as you would a cucumber or pumpkin. Place the seeds in a restricted area since there is a tendency for the Buffalo gourd to *take over.* Plants older than two years are less disease resistant, so starting new plants each year may be an advantage. (Use the roots for fuel production.) The Buffalo gourd may be propagated by stapling the running vines into the soil and watering. A fresh root will start. This plant does not do well when overwatered or in high humidity or rainfall areas.

* * *

Tepary Beans
(Phaseolus Acutifolius)

In the current focus on world hunger, the Tepary bean is beginning to get its share of attention from nutritionists and other scientists who see it as an underexploited crop that does well in hot, arid climates. Scientists at the University of Arizona have concluded that Tepary beans may be one of the better crops to produce food in areas of need. In dry areas, Teparies can be both a source of needed nutrition and also "land recolonizers by growing in areas where other crops are failing and desertification is occurring."

Tepary beans have been part of the diet of the people of the Sonora Desert region of the U.S. and Mexico for centuries. Today, Mexican and Indian people of the area eat these beans, which are produced mainly by subsistence farming.

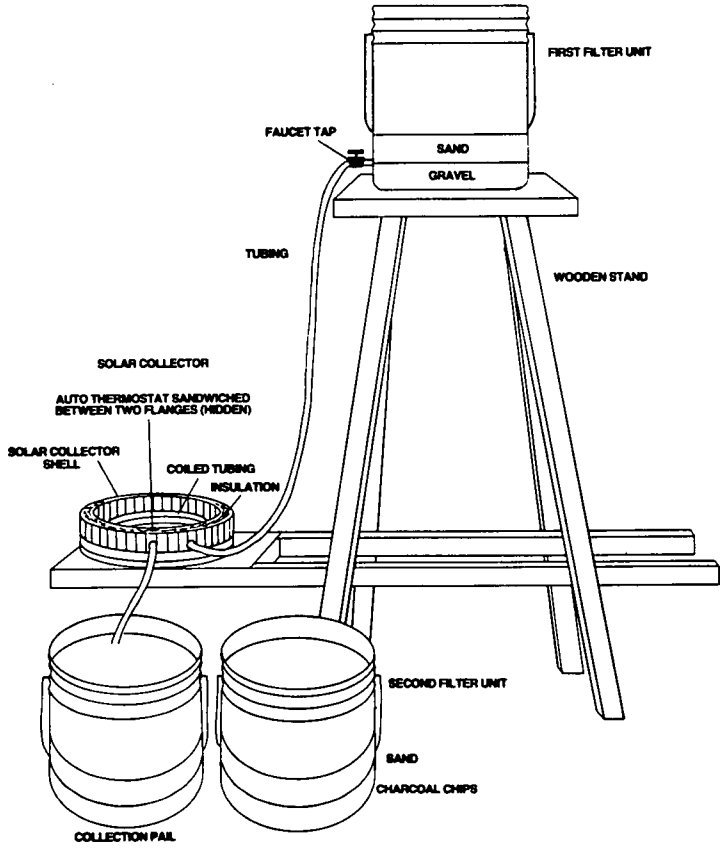
Tepary seeds are smaller than those of the common bean and are usually brown or white in color. The seeds have an immediate reaction to moisture, breaking or wrinkling their coats in minutes. This type of moisture adaptation, the deep root system that allows Teparies to reach a greater reservoir of soil moisture, and a short growth period of 60 to 75 days may explain why

Teparies survive where other beans fail. Teparies produce high yields under irrigation.

Teparies require some water, through irrigation or rain, to start their growth, but after they flower, they can do with very little moisture. They are often planted toward the end of the rainy season. One way to plant Teparies is to toss seeds into plowed or spaded fields or gardens in 15–20-centimeter furrows, then cover them over with the next circuit of plowing or spading. They germinate in four to eight days. The Tepary grows and matures a crop of seeds in response to brief seasonal rain, then dries and dies within weeks of having germinated. Teparies are well adapted to high temperatures; at night they must be kept at a temperature of at least 46 degrees Fahrenheit. They do poorly under frost or waterlogging, and humidity can be a problem.

Teparies contain about 25 percent protein compared to about 22 percent for common beans. They have a mild, distinctive flavor. They are richer in calcium and iron and have a higher carbohydrate content than common beans have. Like other beans, their cooking time is shortened if soaked for a few hours before boiling.

* * *



WATER PURIFICATION DEVICE

How to Build the Water Purification Device

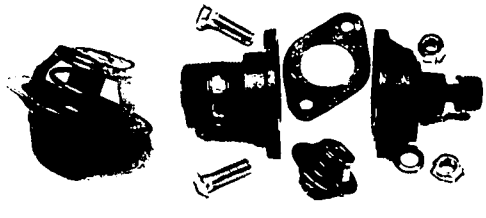
Why build the Water Purification Device (WPD)? The WPD ensures a steady supply of drinkable water. Powered by solar energy, it is easy and cheap to build and maintain.

Is it really safe? I thought water had to be boiled to be safe to drink. The WPD, by raising the water temperature to 71 degrees Celsius/160 degrees Fahrenheit, kills harmful bacteria, just as milk in the pasteurization process does not need to be boiled to become safe enough for human consumption. There are some forms of amoebic bacteria, however, that can only be killed by boiling. Before building the WPD, have the water tested to determine the presence of such amoebic bacteria. You will not want to construct the WPD if the test indicates their presence.

Has the WPD been field tested? Yes, it has been field tested at a model farm and a school in Honduras. The initially impure, bacteria-ridden water was tested at the end of the purification process and found to be pure. The WPD produces enough drinkable water in one day to fulfill the needs of two families.

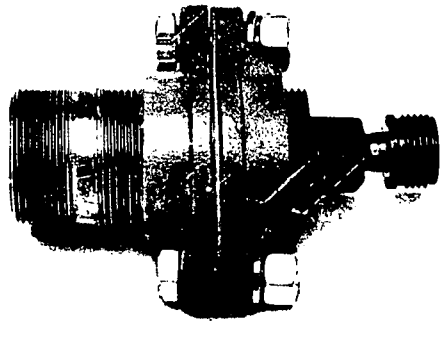
What materials will I need to build the WPD? Are they easy to obtain? The WPD is designed to be built with simple materials that are likely to be readily available. The following supplies are needed:

1. Three clean, five-gallon pails made of plastic or metal.
2. Three transparent plastic or glass lids to cover the pails.
3. Enough fine, clean gravel to provide a two-finger-deep layer in a five-gallon pail.
4. Enough clean sand to cover the gravel with a four-finger layer.
5. Enough ground-up charcoal chips to fill a second five-gallon pail one-quarter full.
6. Enough clean sand to cover the ground-up charcoal chips with a four-finger-deep layer.
7. Fifty feet of plastic or rubber tubing, one-quarter to one-half inch in diameter, preferably black; sun resistant.
8. One drum-size, solar collector shell, approximately one-foot deep and three-feet wide, made of plastic, metal or wood; a second collector, which can fit comfortably within the first, big enough to hold 50 feet of tubing, coiled flat.
9. Transparent cover of plastic or glass for solar collector.
10. Black paint (nontoxic, heat-resistant), enough to cover the inside of the smaller of the two solar collectors.
11. Insulation (corn stalks, paper, glass, wool, styrofoam) to pack around the walls and bottom of the solar collector.
12. Two faucet taps to attach to pails.
13. Auto thermostat, guage rated at 71 degrees Celsius or 160 degrees Fahrenheit.
14. Two flanges between which to sandwich thermostat.
15. Progressively smaller companion flanges or hose.



Auto thermostat

Two flanges, disassembled



Flanges, assembled

How do I build the WPD? Water purification through the WPD is a two-step process. The impure water is run through the first filter (sand and gravel), then into the solar collector (where it must reach a temperature of 71 degrees Celsius or 160 degrees Fahrenheit), then passes to the collecting pail, where it is cooled. The process is repeated, using the second filter (carbon chips). The water is then free of harmful bacteria and ready to drink.

STEP ONE

I. Build Filtration Unit

A. Fill one five-gallon pail with a two-finger-deep layer of clean gravel, then add a four-finger-deep layer of clean sand. Attach faucet tap to the pail base, then secure the tubing to the tap.

B. Place pail on stand at least five feet high. Run the tubing to the solar collector, mounted about one meter (three feet) above ground level.

II. Build Solar Collector (See illustration.)

A. Insert the solar collector inside the solar collector shell. Fill the space between with insulation. Paint the inside of the smaller collector with nontoxic, heat-resistant black paint.

B. Install the solar collector in daylong full sunlight.

C. Coil the tubing flat within the prepared collector. Run the end of the coiled tubing to an exit opening in the collector.

D. Install car radiator thermostat just inside the outer collector shell, at the exit end of the tubing.

1. If the thermostat has a weephole, plug it.

2. Sandwich the thermostat between the two flanges. You will now have two ends of different sizes that need to be connected, the two flange pipestems and the two tubing ends. Use your ingenuity to make this connection fit tightly. (You may attach a series of progressively smaller companion flanges or progressively smaller pieces of hose.)

E. Cover the solar collector with a transparent top.

III. Collect Water

A. Run the unconnected end of the tubing to the collection pail.

B. Collect water and pour into first filtration unit.

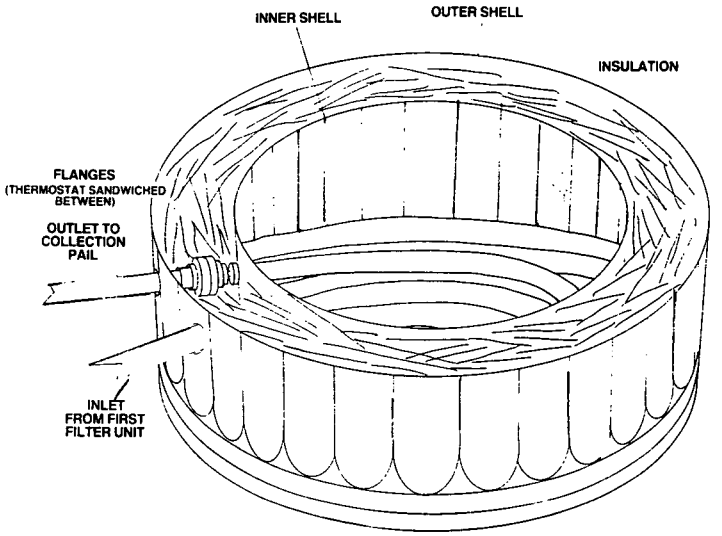
C. After completion of Step One, when the water fills the collection pail, cover it with a lid to protect it from contamination.

STEP TWO

I. Prepare the second filter unit. In a five-gallon pail, place a two-finger-deep layer of charcoal chips in the bottom.

II. At the end of this process, the water will be pure and ready to drink. Cover the pail with a secure top. You may wish to cool the water in the storage pail or in a stream overnight.

III. Store the purified water no more than three days. Discard after three days, as the water may no longer be safe to drink.



SOLAR COLLECTOR

How to Maintain and Use the WPD

What maintenance is necessary for the WPD to continue functioning? The gravel, sand and charcoal filters should be periodically changed as they become soiled. Pails, tubing and pail tops should be kept clean.

Is any monitoring necessary to insure the safe use of the WPD? We suggest using the WPD in conjunction with oversight by a community health clinic as a backup precaution, for periodic testing of the water and follow-up checks on the health of WPD users.

Can the WPD be used the entire year? The WPD can be used wherever there is a steady stream of sunlight. Overcast and rainy days are not suitable times to use the WPD. During the rainy season, clean water can be collected from the rainfall.

We encourage you to write or call Pax World Foundation with your comments and criticisms concerning your experience with the water purification device.

Kathleen Corbett

Photos . . . Frank Herrera
Drawings . . . Julie Megaro

How Do You Rate It?

Following the instructions that appear in the article, if you build the Water Purification Device, please answer these questions and send your response to Pax World Foundation, 4400 East-West Highway, Suite 130, Bethesda, Md. 20814:

1. Did you find the building plans easy to follow?
2. Did you share the plans with anyone else? (Indicate names and addresses if possible.)
3. How often is the device being used?
4. Using the device, how many gallons of water are being purified per day?
5. Did you have any complaints or problems in building or using the purifier?
6. Do you have any suggestions for improving the device?

ICE ALMANAC

ICE Director
David Wolfe

Editor
Judy Benjamin

The *ICE ALMANAC* features a variety of ideas and technologies that Volunteers can adapt locally and highlights particular program areas, with notes and recommendations from specialists in the Office of Training and Program Support (OTAPS).

Information Collection and Exchange (ICE) is Peace Corps' central technical information unit. Requests for technical information or correspondence concerning the *ALMANAC* should be sent to Peace Corps, ICE, Room 8657, 1990 K St. N.W., Washington, D.C. 20526.

AT

INTERNATIONAL

1331 H Street, N.W.
Washington, D.C.
USA 20005

ATI is a well-known organization in the U.S. promoting appropriate technology for developing countries. It was created in 1976 in response to a mandate from Congress to provide Third World countries *access to tools and machines that are suited to labor-intensive production methods and fit small farms, small businesses and small incomes.* Until 1987, ATI's program was totally financed by the U.S. Agency for International Development (AID) through its Bureau of Science and Technology. To AID core support, ATI now has added other funding—from AID Missions, governments and bilateral and multilateral development agencies.

ATI has always seen its role as encouraging the use of appropriate technology to develop income-generating enterprises that create employment and can be replicated. "ATI's interest is less in research and design and more in demonstrating commercial viability," says Carlos R. Lola, a member of ATI's Technical Resources Group and a civil engineer.

For most of its history, ATI has worked with nongovernmental organizations (NGOs) and private institutions to assist rural communities in establishing microbusinesses. Gradually its scope of work has expanded to include small-scale enterprises, often employing up to 25 people, in market towns and semiurban areas.

Over the past two years, ATI's focus has broadened still further. From financing individual projects, ATI now supports technology-based, small-enterprise programs that involve an entire sector or geographical region and attempts to help governments establish policies to foster the growth of these small-scale enterprises. In its 1987 *Annual Report*, ATI's president, Ton de Wilde, gave the rationale for this new approach:

If, as at present, ATI has assisted a local NGO to establish only one small enterprise in a particular region, attempts to overcome political and institutional biases to appropriate technology and its small enterprise development mostly will be ignored. . . . But if ATI helps to establish 15 or 20 small-scale productive enterprises in an area, the government, banks, and training institutions, if any, will be more receptive to suggestions for change.

ATI has also added a macro-policy component to its work. ATI has been organizing high-level, regional conferences to consider the implications of technology on economic development and has commissioned policy studies on the same subject.

Reflecting its more aggressive approach, ATI is now putting greater emphasis on technical rather than on financial assistance. ATI sends its experienced teams of engineers and financial analysts to work with project partners to identify and assess technologies appropriate to local resources and to design projects and provide the technical, managerial and administrative assistance that fledgling small-scale enterprises require. These teams and the ATI Project Officers also provide training to local organizations and assist in monitoring and evaluating project operations. ATI's expertise extends particularly to businesses related to agricultural products, animal husbandry, small-farm support and equipment, and building materials and mineral resources.

ATI also documents and communicates its lessons learned and makes available a wide range of written materials, including its own *how-to* manuals: "Whenever we see a big demand for a particular technology," says Communications Manager Arlene Richman, "we either publish a *Bulletin* to let the development community and the world at large know about the technology or arrange for the writing of a manual to put the technology into the hands of the people."

Projects ATI has financed range from $25,000 to $500,000, with most projects in the portfolio averaging approximately $80,000. Four years ago in Asia, ATI began experimenting with venture capital companies as another method of financing small-scale enterprises and providing them with the necessary technical and management assistance. These are being established jointly with organizations in developing countries.

The following examples suggest the breadth of ATI's activities:

- ATI engineer Carl Bielenberg developed a manually operated ram press to produce oil from sunflower seeds, which was successfully demonstrated in Tanzania, where 40 small oil extraction businesses now operate. The ram press is being replicated in an ATI project in Zimbabwe and through a regional project in other areas of eastern and southern Africa. An ATI manual, with blueprints and drawings of the ram press, is being prepared.
- In Costa Rica, ATI and a local technological institute cofunded the development of a traditional lime kiln. The research and development phase included defining kiln modifications, constructing and operating an improved kiln prototype and conducting a lime market study and a commercial analysis of lime processing. Entrepreneurs are now beginning to use the new kiln.
- ATI established a venture capital company with an Indonesian development organization, which is now concentrating on improving business for farmers who raise shrimps in small ponds along the coast. A hatchery has been created to produce shrimp fry and feed, and farmers are receiving financial and technical assistance to raise and market the shrimp.
- An ATI project in Kenya improved the production of metal stoves by introducing the addition of ceramic liners, which reduce the fuel consumption of the traditional metal stove by 25–30 percent. An ATI staff member designed a motor-driven mold to make the ceramic liners. Together with CARE, ATI is preparing a manual describing this innovation.
- As part of its evaluation of a hydro-powered milling project in eastern Zaire, ATI assessed the economic value of the labor-saving mills on women's lives. Responses from women who have been using the mechanized mill that grinds cassava into flour indicate that the mill has been so productive that women now have more flour to sell in the market; they also have had to buy additional dried cassava from growers in remote areas, who make a profit as well.

ATI's work in four countries suggests the direction it plans to take in the future. ATI has established its first branch office in Manila. In Costa Rica, ATI has supported the Ministry of Science and Technology in the preliminary design of a plan to make the best use of that country's resources. The Netherlands government is expected to fi-

A Guatemalan couple display a woolen blanket they produced through the support of ATI's project to improve wool and sheep production.

nance the potential countrywide program.

A project in Sri Lanka is ATI's first attempt to test the effectiveness of microcomputers as a tool for development. In trying to help rural villagers increase their incomes from backyard spice production, ATI is teaching them how to cultivate, harvest and dry spice through a program that combines video tapes and computerized lessons. If successful, ATI will support the development of similar programs to train people in other appropriate technologies.

ATI's project in Guatemala marks the organization's first attempt at a sectoral approach. Monitored by ATI with the help of a Peace Corps Volunteer, this AID/ATI-funded project is improving the country's wool and sheep production. Taking the process from start to finish, ATI has become involved in such activities as crossbreeding the native sheep with imported Corriedale rams to improve the quality of the wool; providing grass seed to give the sheep better pasture; introducing different fodder to balance the animals' diet and different methods for shearing and washing their fleece. At the other end, ATI also is introducing technology to improve the processing and marketing of the wool, including training workers in spinning, weaving, knitting and design. A store operated by the Artisans Cooperative supplies artisans with the materials they need. The Peace Corps Volunteer has been especially helpful in guiding farmers day-by-day, helping select the best animals for breeding and making farmers conscious that their sheep are properly fed, especially during the mating period. The Guatemalan wool project has become the model for an alpaca production and processing project in Bolivia, which ATI expects to implement for the UN Capital Development Fund.

ATI favors cooperation with Peace Corps. ATI staff members, many of whom are RPCVs, regularly keep in touch with Peace Corps field offices to identify potential ATI initiatives.

Discussions were held with Peace Corps/Honduras about improving the country's agricultural production by using ground limestone to reduce the acidity of the soil. A Peace Corps Volunteer, a geologist, is assessing the quality of the local limestone to determine what technology to propose for a possible agricultural lime project.

After attending the first ATI training workshop on the manufacture of the ATI-Hotchkiss wheelchair, PCV Paul Silva has established a shop to fabricate this device in Paraguay. ATI has a detailed wheelchair-production guide available to anyone interested in following his lead, as well as other publications on various policy and technical issues. ATI uses Peace Corps publications in demonstrating new technology and is interested in collaborating with Peace Corps on several manuals.

PCV Paul Silva demonstrates an ATI-Hotchkiss wheelchair manufactured by the workshop he established in Paraguay.

VOLUNTEERS IN TECHNICAL ASSISTANCE

1815 N. Lynn St., Suite 200, Arlington, Va. 22209

How do Volunteers in Technical Assistance differ from Peace Corps Volunteers? We posed this question to VITA's president, Henry Norman, who knows both groups well. He was Peace Corps Director in Guinea in 1963–1967 and again in 1969–1970.

As Norman explains, in contrast to PCVs, the majority of VITA volunteers do not serve full-time but have other highly skilled jobs. They offer their help as volunteers normally do—on evenings and weekends. Most are professionally trained in some technical field. Out of more than 5,000 VITA volunteers, about 1,400 are graduate engineers; some 1,200 hold doctorates; and 650 serve on college faculties. They are from 100 different countries, often becoming a part of VITA's pool of volunteers in response to a request coming from their own countries.

Normally, VITA does not actively recruit volunteers. People apply to the organization because they have heard about its work and want to offer their assistance. A recent article about VITA's activities in China, for example, which appeared in the journal of the American Association of Retired Persons, produced 2,000 letters addressed to VITA, asking for information. Out of the 2,000 letter writers, 200 applied to VITA to serve as volunteers.

Many hear about the organization through its weekly, five-minute radio broadcasts over Voice of America. Communication is one of VITA's principal activities, so these broadcasts are vital to its work. Each deals with some technical subject and elicits from 1,000 to 1,500 letters each month from listeners requesting information. These are examples that Brij Mathur, Director of VITA's Information Service, describes:

- A businessman from India requested technical assistance to improve the quality of solid fuels he was supplying to the hotel industry in India.
- A resident of Brazil requested information on building a water treatment system.
- A company in Nigeria requested information on growing and processing mushrooms to cater to the hotel industry in Lagos.
- A technology center in Botswana requested advice on a method to accurately measure and control the temperature in ovens used by their clients' bakeries.

In contrast to some other technology information centers in the U.S., VITA answers all inquiries, regardless of what person, organization, or country originates them. Analyzing these inquires, Mathur has selected about 100 subjects that most often interest people writing to VITA and has asked knowledgeable volunteers to prepare monographs in response. Last year, VITA mailed out 6,000 copies free of charge. The series of monographs are of two types: One profiles potential industries for underdeveloped countries, describing the production and plant requirements and the necessary market and resources; the other describes in brief, simple terms specific technology in the areas that concern VITA—communications, small enterprises, agriculture and food processing, water resources and renewable energy. VITA has a list available to order its publications.

When inquiries require follow-up, Mathur will put the individual or group in touch with a volunteer who can provide the needed information. This may produce a long-term correspondence or possibly a short-term visit. VITA's most recent newsletter, for example, contains an account of a volunteer, a retired mechanical engineer from New Mexico, who is now in Morocco helping a French physicist produce photovoltaic panels to provide cheap, solar energy for African countries.

Focusing on communications, VITA has been experimenting with several programs. Together with England's University of Surrey Research Unit, VITA has developed

Volunteers and their counterparts attend a VITA training session in Belize.

packet radio ground networks, which connect computers via radio and link up globally through a satellite system, *PACSAT*. Stations can operate on batteries or solar cells, making them especially useful in remote areas. VITA has demonstrated the technology in the Philippines, to transmit information among health centers throughout the islands; in Tanzania, to provide a countrywide newspaper network; and in Ethiopia, to help field staff coordinate famine relief efforts.

Disaster relief in general has been a concern of VITA, which recently began operating a computerized Disaster Information Center financed by AID. The Center proved its effectiveness almost immediately, matching needs with resources in response to the hurricane that struck Jamaica and the earthquake that devastated Soviet Armenia.

From providing information, VITA has turned to training people in developing countries to manage their own communication networks. At its Washington-area headquarters, VITA has trained almost 200 persons from organizations in 42 countries that are developing computerized information systems. VITA representatives also traveled to the Philippines to train some 50 librarians in computerized storage and retrieval systems and to Kenya to help staff from vocational training centers with their computer needs.

Providing information has led VITA on occasion to engage in long-term projects. These projects have included providing technical assistance and credit support for small businesses in Chad; promoting energy conservation in Djibouti; helping to produce and distribute a cheap and easy-to-make, metal cookstove in Mali; and assisting in an AID-financed rural development project in Sudan, encouraging women and private organizations to participate.

Projects such as these are staffed by permanent VITA employees, by volunteers, or by a combination of the two. Volunteers' expenses are paid, and some also receive a salary.

Assisting the VITA project, PCV Karen Brody works alongside Belizean farmers.

Some VITA projects have involved Peace Corps Volunteers. An agribusiness project in the southernmost region of Belize, described in the April 1989 issue of *VITA News*, relied on a PCV who had completed his Peace Corps service there to familiarize the VITA team with local conditions. His experience and rapport with the farmers enabled him to act as a VITA short-term Extension Management Consultant and prepare a crop production calendar showing when crops are planted and harvested to help the team devise work plans. Currently, three PCVs are involved in the project. One of them is a woman with a background in sociology, who is working directly with Belizean women to encourage their participation.

A post-harvest project in the Central African Republic to improve farmers' productivity has had two successive pairs of PCVs assigned to it. They work side by side with VITA staff and host-country nationals, serving as extension workers. VITA asked for Volunteers with some related experience and knowledge of French, and assisted in their Stateside Training.

VITA's projects are not all nonprofit. Some can involve acting as a broker for potential business ventures in the Third World. One of its activities, for example, is securing used factory equipment and making it available to developing countries. VITA then earns a commission as the go-between.

Having started as a group of GE engineers volunteering their technical assistance, VITA is generally willing to try different approaches. "The only thing doctrinaire about VITA," says President Norman in summing up his organization, "is that we want to bring about development. Our ultimate goal has to be the development of new wealth in Third World countries."

Workshop Promotes Environmental Education in Africa

The Meru Hotel, in beautiful downtown Arusha, Tanzania, was the site of an environmental education workshop, held May 14 to May 20, 1989, for Volunteers and their counterparts working in conservation education, or parks, wildlife or other natural resources programs in Africa. Representing some 15 African countries, over 65 people participated.

OTAPS' Natural Resources Sector and the Tanzanian Ministry of Lands, Natural Resources and Tourism sponsored the workshop with several objectives in mind:

1. to increase participants' effectiveness in getting local communities concerned about the environment;

2. to develop strategies for managing protected areas without challenging traditional community values; and

3. to develop country-specific plans for promoting environmental awareness.

The overriding theme was exploring approaches to involving communities in protecting their own environment.

To carry out their goals, the workshop's organizers used a variety of techniques. Lectures focusing on the differences between the European and traditional African views of nature were followed by individual country presentations and small group discussions. Field trips to the Miweka College of Wildlife Management and to Arusha National Park gave participants a chance to see spectacular wildlife and meet the people training the managers of many of Africa's national parks.

Rating the workshop an outstanding success, the participants especially appreciated the opportunity it gave them to meet other persons with similar goals and discuss problems and achievements. As a follow-up, they decided to issue a newsletter to have a regular exchange of information and ideas on environmental education programs.

OTAPS is issuing a report of the proceedings, which will include the action plans developed at the workshop for each country represented. Here is a sample:

- Rwanda—A national education program is planned that will support the government's project to protect the mountain gorilla and at the same time satisfy the needs of nearby communities.
- Liberia—Staff administering the Sapo National Park will develop a conservation education program, including slide shows for the general public and presentations for local schools, to change people's attitudes and behavior towards their environment. Park staff will also attempt to involve the public through village advisory groups.
- Senegal—Conservation education will be included in Peace Corps' African Food Systems initiative, which integrates efforts to improve food production at all levels, from planting to marketing. In addition, the advice of Islamic scholars will be sought to develop a strategy in support of conservation based on the teachings of Islam.

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ICE Publishes New Manual for English Teachers

ICE's most recent publication is *TEFL/TESL: Teaching English as a Foreign or Second Language.* This manual, written by staff members of the Center for Applied Linguistics, is expected to become the standard text and reference for Peace Corps Volunteers teaching English in any context, whether in formal classroom settings or informally with friends and neighbors. One of the unique features of this manual is that it combines general teaching techniques with specific language-teaching methods. This should be extremely helpful for Volunteers with no previous teaching experience.

The manual does not prescribe any particular approach to language instruction; rather, it outlines each of the major approaches commonly used in the U.S. and in countries where Peace Corps is working and points out the advantages and disadvantages of each approach in different situations. The chapter entitled *Working with a Variety of Approaches* discusses methods that are used in *Traditional Language Teaching, Communicative Language Teaching* and *Innovative Language Teaching,* three general approaches to teaching English.

Special attention is paid to the different needs and constraints of situations in which PCVs may find themselves. Techniques discussed include those for assessing the needs of a school and individual students, working within various school systems, working in classes with students at various levels of competency, and dealing with other constraints frequently found in Peace Corps countries, such as teaching without textbooks or with insufficient quantities of textbooks.

Other chapters cover teaching the four basic language skills (speaking, listening, reading and writing) and grammar, planning lessons and testing. As well as the many exercises and techniques given in the text, additional materials useful for language teaching (many also available through ICE) are listed.

This book is recommended for all PCVs teaching English. A number of copies of the manual have already been sent to each Peace Corps country. To request additional copies, use the title and number, M041.

Books on Park Management

Planned and managed properly, national parks and protected areas offer major sustainable benefits to society. They play a central role in the social and economic development of rural environments and contribute to the economic well-being of urban centers and the quality of life of the people living there.

Since the 1960s, Peace Corps Volunteers have been involved in projects to improve the planning and management of parks and protected areas. Of the few references on this subject oriented to lesser-developed countries, one of the best has recently been reprinted by ICE, **Planning National Parks for Ecodevelopment: Methods and Cases from Latin America,** by Kenton R. Miller (ICE No. R073).

This reference book covers the range of planning strategies, from those involving national land use to those related to planning specific sites. The overriding theme is how to design parks and protected areas so that they benefit local people.

A related publication is **Managing Protected Areas in the Tropics** (ICE No. FC148) by MacKinnon, Child and Thorsell. Although it focuses more on management, this book does contain a 27-page chapter on park planning. Written in 1986, it is the best publication available on protected-area management in the tropics.

Books on Municipal Planning

The two books abstracted here have been distributed by ICE to Peace Corps offices in countries that have urban programs. A few copies still remain. While the supply lasts, other Peace Corps offices may request copies for their Volunteers involved in municipal planning projects.

Management of Local Planning, by David C. Slater. 1984 (International City Management Association, 1120 G St. N.W., Washington, D.C. 20005) 288pp. $28.95 (paperback).

A useful reference for Volunteers associated with the management of local development and municipal governance, outlining issues to be addressed by local planning units. "Explains the nuts and bolts of management in the areas of organization, finance, personnel, information and communication and shows how planning directors and their staffs can effectively build planning into the mainstream of local government management and operations." Includes an annotated bibliography.

The Practice of Local Government Planning, edited by Frank S. So and Judith Getzels. 1988 (ICMA, 1120 G St. N.W., Washington, D.C. 20005) 554pp. $38.95 (hardcover).

American planners' basic reference book. Subjects covered include the context of comprehensive, physical planning; district,

Sector Updates

NOTE: *ICE has received the publications described below since the July/August 1989 issue of* ***ICE ALMANAC.*** *They are for the use of Peace Corps Volunteers and staff, and ICE makes these publications available to them free of charge. If* **(RP)** *precedes the ICE Publication Number, Volunteers must describe how the publication relates to the projects they are working on when requesting it from ICE.* **(IRC)** *indicates ICE distributes it only to In-country Resource Centers or Peace Corps staff. All the other publications listed are made available to Volunteers, without restrictions. We include the price and the publisher of each title for the benefit of our non-Peace Corps readers.*

AGRICULTURE

(IRC) AG 227—**Introduction to Farm Surveys,** by Josette Murphy and Leendert H. Sprey. 1986 (International Institute for Land Reclamation, PO Box 45, 6700 AA Wageningen, The Netherlands) 162 pp. $12.00.

Well-written handbook for use at the village level. Presents basic background on farm surveys, mathematics, farm management and farming practices. Discusses why information is gathered, how it will be used and how quality of work affects the results of farm surveys. Useful as a way of enhancing program design and as a skill transferable to village members.

(IRC) AG 229—**Conservation Farming on Steep Lands,** edited by W.C. Moldenhauer and N.W. Hudson. 1988 (Soil and Water Conservation Society, 7515 Northeast Ankeny Road, Ankeny, Iowa 50012-9764) 296 pp. $25.00.

Essential reading for decision makers who create and finance agricultural development plans and for conservation technicians who implement those plans. Views the conservation of soil and water resources as an integral part of the development process. Good case-study examples help identify corrective measures for the physical causes of soil degradation. Associates failure of purely engineering approaches to a lack of consideration of underlying socioeconomic factors. Useful handbook for countries that include soil conservation as a programming priority.

EDUCATION

(IRC) ED135—**The Instructor's Survival Kit: A Handbook for Teachers of Adults,** by Peter Franz Renner. 1983 (Training Associates, Ltd., Publishers and Consultants, 2665 W. 42nd Ave., Vancouver, British Columbia, V6N 3G4, Canada) 136 pp. $18.95.

Designed to "help keep your head above water during the first few sessions you teach." Addresses means to break the ice with a new group through the use of physical settings that facilitate acquisition of knowledge, skill acquisition or attitude development. Identifies a variety of ways to present information, utilize standard visual aids, involve learners and encourage response. For seasoned teachers, later chapters contain information to help develop interpersonal and planning skills.

FISHERIES

FH103—**A Hatchery Manual for the Common, Chinese and Indian Carps,** by V.G. Jhingran and R.S.V. Pullin. 1988 (Asian Development Bank/ICLARM, PO Box 789, Manila, Philippines) 191 pp. $15.00.

Designed to provide practical guidance for carp hatchery workers and background information on carp biology and culture. States the advantages and disadvantages of available methods in various geographical and topographical situations. Describes the stages of the production from breeding to fingerling. Includes methods of transporting live fish seed, selecting proper feed and preventing disease. Contains photographs and tables.

SMALL ENTERPRISE DEVELOPMENT

(IRC) SB119—**Improving Public Enterprise Performance: Concepts and Techniques,** by Victor Powell. 1987 (International Labor Office, CH-1211, Geneva 22, Switzerland) 282 pp. $24.50.

A review of current small enterprise development policies as applied in countries with a variety of socioeconomic settings. Discusses the role of government and informal sector training in an effort to reach an optimal environment for small enterprise development.

(IRC) SB129—**Training Entrepreneurs for Small Business Creation: Lessons from Experience,** by Kenneth Loucks. 1988 (International Labor Office, CH-1211, Geneva 22, Switzerland) 137 pp. $15.75.

Reviews development programs in India, Bangladesh, Uganda, the United Kingdom and the United States to identify elements common within each program that yielded successful results. Describes techniques and methods to identify new entrepreneurs and create viable small businesses. Concentrates on market identification and infrastructure development, viability, cost effectiveness and relevance to national development needs. Written for those involved in designing and implementing entrepreneurship training programs in developing countries.

(**Books** . . . *from page 23)*

environmental and transportation planning; urban design and land use regulation (zoning); economic and social planning, including housing; and management, finance and information gathering. Touches most of the issues that a local planning office will be involved with in developing comprehensive plans for future city growth. Discusses some of the newer planning themes of U.S. cities, including fees and special taxes, social and environmental impact assessment, performance standards and growth management systems. Although U.S. specific, it can provide the planner in a developing country with a checklist of useful steps to be considered when planning for the future expansion of cities and towns.

Small Project Assistance Program (SPA)

SPA is a unique program that joins the human resources of the Peace Corps with the financial resources of the Agency for International Development (AID). Established in 1983, the program currently supports small self-help efforts through direct grants to community organizations in over 35 countries.

SPA consists of two components: the SPA fund, which directly supports community projects; and the Technical Assistance (TA) agreement, which provides training and technical advice to PCVs, staff and Host Country Nationals (HCNs) working on these projects.

SPA grants are made by PC/Country Offices to community groups working with PCVs in food production, small enterprise development, renewable energies and health.

Funds are available through PC/Washington to provide in-service training for PCVs and HCNs and to provide countries with program consultants. TA activities stimulate and/or directly support SPA projects.

For information on qualifying for a SPA grant or for Technical Assistance, contact the PC Country Office or the SPA Coordinator, OTAPS, PC/Washington.

A SPA Example: Twenty women from Navitas, a fishing village in the Philippines, were interested in expanding their individual businesses. A Volunteer suggested that instead of just selling fresh fish, they process it and preserve the fish in reusable jars to sell the product to groceries and supermarkets. An $800 grant from SPA made it possible for the community to purchase a pressure cooker and an initial supply of jars and lids for canning. This project is (1) giving people living in remote areas access to a valuable source of protein, (2) preventing unsold fish from going to waste, (3) giving each of the women a better income and (4) creating new jobs.