

THE PEACE CORPS' ROLE IN
Food Production



A GRASS-ROOTS BRIGADE IN THE WORLD'S **Green Revolution**

The Peace Corps works to bring change and development at the grass-roots level.

In developing countries, the grass-roots level is literally the entire agricultural structure—the man who farms, the family members who assist him, the tools and animals they use, the extension service and marketing system, or lack of them.

Farming is the major occupation of the vast majority of people in the developing world. Not only is it a job and a livelihood; it is an entire way of life.

But only in recent years have the small farmers of developing nations been recognized by the “experts” as the key to development. The economic base of these countries, it is now reasoned, can only be broadened through improvement in agricultural methods, leading to increased yields.

At the same time, the farmer is still considered by many the most conservative member of his society, the

man most likely to resist those very changes that can materially improve his life and, eventually, the life of his entire nation.

Slowly but surely this view of the farmer is yielding to the weight of new evidence about his way of thinking. Gradually, technology is reaching the developing nations. The farmer has begun to see improvements in the crops of others; he has begun to realize that farming can be something more than subsistence survival.

Instead of the “land to mouth” existence he scratches out of his small patch of earth each year, farming can be a profitable business, a money-making enterprise.

This awareness is usually all the encouragement the farmer needs to change his ideas. But he needs a direct and personal kind of help to actually change his way of doing things.

A Place for the Peace Corps

This is where the Peace Corps fits in. It places Volunteers with agricultural backgrounds—actual farm experience and/or education—in jobs where they can pass on their experience and encouragement to the farmers of developing countries.

This isn't easy as it sounds. Most Peace Corps jobs bear little resemblance to the same kinds of work in the U.S. The goals are the same—increasing yields—but the Peace Corps Volunteer overseas must often work with primitive supplies and tools—for example, bullocks instead of tractors.

The trick is to fit your know-how and the modern farming tools and aids that will be available through local government sources (improved seed, fertilizer, etc.) to the situation at hand.

As problems of production are solved, new problems emerge. What will the farmer do with an extra 50 bushels of corn? Will he have enough

space to dry it? Will he have enough room to store it? Will he have someone to buy it? How does he get it to market? The Peace Corps needs specialists to help solve these new and unexpected problems.

Working with a government agricultural worker in the extension service or some other agency is an important condition for effectiveness. This relationship provides the Peace Corps Volunteer with a unique insight into what the real problems are, as felt by the people who live there rather than by someone from the outside.

Technical capability is not, in itself, a complete answer to the needs of the small farmer. A Peace Corps Volunteer with the necessary agricultural skills must also be a competent communicator. Acceptance must come before change. A Volunteer living in a small rural community must be able to accurately assess and accept the many subtle factors that influence the farmer before he is able to communicate toward constructive and lasting change.

The successful Volunteer must instinctively find the best way to translate scientific know-how into language the farmer understands. He must become an accepted member of the community, sharing in the benefits of a good harvest or suffering because of a bad one. He must understand why the people seem “resistant” to change.

An Expert on Subsistence

After all, the subsistence farmer is an expert in his own right. He is an expert on the seeds he plants, the land he farms, the rain that delivers his crops or destroys them and the appetites that his labors must appease.

He knows from costly trial and error experience—and the experience of his father and forefathers—that certain traditional practices employed on his small plot of land will

Inside Story

The Peace Corps farmer isn't always an agriculturalist to begin with. In fact, the Peace Corps looks for three types of farmers for its overseas programs:

1. The Volunteer with an agriculture degree who plans to make agriculture his life work. See Page 4.

2. The Volunteer with a farm background: he may be a liberal arts graduate who was raised on a farm or he may be a working farmer. See Page 8.

3. The Volunteer with a liberal arts degree and no farm background at all. This is the “A.B. Generalist” who will be trained by the Peace Corps in a specific agricultural skill. See Page 5.



Ron Buell's degree in geology took him into a Peace Corps water resources program in the States of Haryana and Punjab in India. Here, he's checking the discharge from a drill rig, only slightly distracted by playful children.

yield certain results. He cannot afford to gamble. His existence is at stake.

People whose very lives depend on how much rice they can get off one hectare of land may not listen willingly to a stranger. People who have everything to lose and not much to gain may reject promises of bountiful harvests from the wonders of science. Only by patience and by tactfully demonstrating his own skill can a Volunteer convince them that his methods may be more profitable than their traditional ways.

A Volunteer is interested in af-

fecting not only one farmer but the entire farming community. He must start small and slowly, but one way of multiplying his efforts may be to promote cooperatives of all farmers in his area. It is impossible for a subsistence farmer to be able to afford to put all the needed inputs into his crop. Money is scarce, usury is rampant, and rural banks, although increasing, are few and far between, their operations not geared to meet the demand generated by the immediate need.

The farmers, in the end, must depend on each other. Through

co-ops and credit unions, they are able to get the inputs needed to turn farming into a profitable business. The Volunteer with ag business experience or education can aid in forming a needed cooperative or credit union.

A Chain Reaction

As a Volunteer becomes involved with the immediate problem of increasing yields, he soon finds himself equally involved with all the other necessary pieces of the picture. Turning subsistence farming into a business requires more than just convincing a farmer to plant a new variety or to use fertilizer and insecticide. An ag Volunteer must be prepared to introduce the farmer to the complex infrastructure of commercial, competitive agriculture.

For example, communication with a basic research agency is important. Basic research can provide suggestions on promising new varieties of seed, fertilizers, insecticides and herbicides, in addition to alerting the farmer to harmful insects and plant diseases. The Volunteer, working with the farmer, must apply this basic research to his own situation, finding out for himself what works and what doesn't.

Local outlets for seeds and chemicals must be located. These distributors of agricultural supplies are sometimes the farmer's only link with current research data as well as being a source of sorely needed materials that are often in short supply. A farmer can't travel 100 miles for a box of Sevin when brown planthoppers can suck his green rice field into brown straw in a few days.

In addition, sources of rural credit must be found; other extension workers in the area must be met and consulted; local transportation and marketing systems must be explored; and cooperatives must be formed to facilitate the whole process.

If all these diverse problems can be attacked, there is a real chance that small farmers can become producers in the mainstream of their nation's economy, instead of merely survivors on the edge of it. The Volunteer who understands agriculture and knows how to communicate with farmers on their level can be the spark that starts this attack. His reward? Watching people who once had no future begin to provide impetus for their country's development—from the grass roots up.

WHAT THE PEACE CORPS OFFERS

Ag Grads

Consider what would happen if you stepped into a time machine and landed back in the United States of the early 1800's with your ag degree. That's pretty much what it's like to be a Peace Corps Volunteer today, working in agriculture in developing countries. The efficient, professional techniques now available to the American farmer are distant, incomprehensible dreams to the farmers of less developed countries. An agriculturist in the Peace Corps can help make these dreams a reality.

It's sometimes hard to believe how good we've gotten at growing food with the least possible effort. Four or five men can easily plant hundreds of acres of rice in one day by airplane without raising a drop of sweat. Compare that method to the labors of a rice farmer and his water buffalo as they plod sluggishly through two or three acres for days trying to mix soil and water into the right consistency for planting.

Think how easy it is to broadcast germinated seeds in a field instead of transplanting seedlings one at a time. Think how accessible and relatively inexpensive agricultural chemicals are, compared to the back-breaking work of weeding a field by hand.

A combine rolls through a field of wheat, gathering in stalks of grain, threshing and separating them in one mechanized operation. A village of Indians goes through the same operation barefoot, wading slowly through the dry, sparse fields of grain, carefully cutting each plant at the base, then gingerly carrying the bundles of grain from the field, watching their steps lest they lose a grain.

The Peace Corps today is showered with demands from almost every country it serves for people with the necessary technical skills to bring our farm know-how to farmers in developing countries. There's no job directly or even remotely related to

agriculture that doesn't need doing—desperately—overseas, from laboratory experimentation in basic research agencies to extension work in the farmer's fields. Following is a brief description of what aggies do in the Peace Corps:

AGRICULTURAL ECONOMICS

Marketing: Volunteers are helping create new markets and improve existing ones. They are also working directly with farmers to upgrade their products, establish grade standards and improve packaging methods.

Management and Planning: Agricultural extension personnel in many developing nations are sparsely trained and have little on-the-job experience. Volunteers backstop these counterparts with practical advice on the financial aspects of management and planning at the farm level.

Statistics: Volunteers are establishing systems for acquiring and maintaining data on pricing and production for agricultural products and training personnel to analyze existing data so that future agriculture programs can be better planned.

(Continued on page 6)

C. Dean Freudenberger (left front) introduces Peace Corps trainees for Dahomey to the intricacies of citrus tree grafting. An official of the World Council of Churches who has worked many years in African agriculture, Freudenberger is exchanging his knowledge with trainees for a firsthand look at Peace Corps training methods in the Virgin Islands training camp, which prepares Volunteers for service in West Africa.





Ted Ellerkamp (right) is a psychology major turned rice planter on Guimeras Island in the Philippines. Like Ted, many "B.A. generalist" Volunteers work in rice production programs in the Philippines in addition to their regular jobs as teachers.

Liberal Arts and Green Thumbs

Many liberal arts graduates considering Peace Corps service shudder at the possibility of being assigned to an agricultural program. They have had no farm experience, know little about agriculture and wonder how they could be of any help to farmers in a developing nation. Yet it is these Volunteers, the B.A. Generalists, who are the backbone of Peace Corps agricultural programs.

Through the uncomfortable route of experience, the Peace Corps has learned that it cannot transform liberal arts graduates with no previous farm experience into all-around agricultural experts in 12 weeks of training. This has led to the development of "intensive single-skill programs" utilizing Volun-

teers who have been trained in one narrow aspect of agriculture and who are given proper technical support.

For example, a Volunteer destined for a village-level food production program in India is trained in the cultivation of hybrid maize and hybrid sorghum. And he'll learn enough about it to be considered an expert by the farmers he works with.

Volunteers bound for the Chad program were trained intensively in well drilling and maintenance.

In Bolivia, generalists are doing a remarkable job of increasing wool production (and thus farm income) by teaching campesinos to use shears on their sheep rather than broken glass or jagged

tin. These Volunteers were trained in the basics of wool production, including shearing.

And in several nations in Southeast Asia, generalists are effectively participating in the "Green Revolution," introducing and teaching the cultivation of IR-8, the new high-yield rice.

Far more important than technical skills, however, are the other qualities the generalist brings to the Peace Corps: his desire to help others and his abilities to adapt and to organize. The sheep shearing or the rice planting is the easiest part of the job. It is tougher to become a trusted member of a village. It is tougher to set an example seven days a week. It is tougher to guide rural people to recognize their own needs and then to take those first cautious steps toward helping themselves. Those are the key goals of all Volunteers and frequently the generalist is best prepared to achieve them.

Cooperatives: Most agricultural economist Volunteers are working in this field, establishing or supporting cooperatives for purchasing, credit, marketing, processing and transportation.

Current and future programs include: Colombia, Ecuador, Fiji, Honduras, Jamaica, Kenya, Lesotho, Nicaragua, Panama, Paraguay, Peru.

AGRICULTURAL EDUCATION

In many developing countries as much as 80 per cent of the population is engaged in farming, yet few of the secondary schools have agricultural courses because there are no instructors. Volunteers are now assigned to high schools and agricultural training centers developing curricula and programs of practical farm machinery repair and maintenance, teaching basics of soil and water conservation, developing rural youth groups and assisting in teacher training. Current and future programs include: Kenya, Malaysia, Paraguay, Peru.

AGRICULTURAL ENGINEERING

Irrigation: Increased pumping of water reserves and misuse of water through poor practices has created serious water shortages in the Near East and Asia. Volunteers are assisting in the design, construction and operation of new irrigation systems; conducting water use surveys; teaching land-leveling practices and cooperative methods of water use to villagers. In areas of the world where excess water is the problem, Volunteers are designing surface and underground drainage systems.

Soil Conservation: Volunteers are surveying, mapping and planning projects. Others are working directly with farmers in the construction of terraces, laying out contours and demonstrating the use of grasses on slopes. When materials are available, Volunteers are designing and constructing such facilities as drop dams and spillways.

Farm Mechanics: Volunteers are involved in designing shops for the

maintenance and repair of farm equipment; working with machinery dealers to assemble farm equipment; teaching secondary school and adult classes mechanics and assisting in the modification of existing implements for use under local conditions.

Current and future programs include: India, Kenya, Thailand.

AGRONOMY AND SOIL SCIENCE

Volunteers are working at all levels, from government experimental farms to the villages, to improve agricultural technology. Among their projects are the introduction of hybrid corn and new varieties of cereal grains; demonstrating the safe and proper use of chemicals to control insects and plant diseases; introducing chemical fertilizers and explaining the need for soil testing and long-range fertilizer programs. Volunteers in soil and management projects are teaching farmers the effects of tillage, drainage and irrigation, and researching soil problems of their area.

Current and future programs in-

Volunteer Lance Haddon and his wife Marcia live on Bolivia's Altiplano, where Lance teaches modern methods of sheep shearing and his wife teaches health and nutrition to neighbors in surrounding villages. Introduction of better shearing methods has significantly increased wool production in the area—and thus farm income.



clude: Bolivia, Botswana, Brazil, Colombia, Dominican Republic, Honduras, India, Iran, Kenya, Micronesia, Nicaragua, Panama, Peru.

ANIMAL HUSBANDRY

Swine: Volunteers assigned to government breeding stations are working to improve current stock. Other Volunteers are introducing balanced rations for breeding stock and for fattening swine, and working to establish the foundations necessary for control and prevention of diseases.

Beef: Working with beef producers, Volunteers are upgrading breeding stock, are introducing grading, inspection and processing of beef animals for market and improved range and grasslands management through pasture rotation, fertilization and new grass varieties.

Dairy: Volunteer dairy extensionists, working with cattle, goats, sheep and buffalo, are introducing better dairy methods. They are teaching mastitis and brucellosis control, and the necessity of proper feeding.

Poultry: Beginning at the level of convincing villagers to keep their birds penned, Volunteers are working at all levels of poultry production, health and management, including research, marketing and processing.

Current and future programs include: Bolivia, Chile, Colombia, Ecuador, India, Iran, Kenya, Micronesia, Panama, Peru, Thailand.

HORTICULTURE

Vegetables: An increasing number of Volunteers are being utilized in rural community development projects. They assist host country extension agents in planning and conducting demonstrations to teach farmers better production practices; they introduce new vegetable varieties better adapted for long-distance transportation in an effort to extend marketing areas; they experiment with new harvesting, grading and packaging techniques.

Fruits: Volunteers are teaching propagation in government and private nurseries; others are working directly with the farmers to improve cultural and production practices.

Current and future programs include: Colombia, Ecuador, Honduras, India, Iran, Malaysia, Micronesia, Peru.

VETERINARY MEDICINE

Volunteer veterinarians are doing



Volunteer Greg Powell works in an agricultural development program in the Okpara Pilot village in Dahomey. Greg's job includes training the local tractor drivers in maintenance and repair.

everything from teaching in universities to making farm visits to treat sick animals. Duties include policing the manufacture of veterinary drugs, management of programs in slaughter and processing, direct basic and applied research in animal diseases, and participation in country-wide disease control programs. Volunteer vets must often improvise or substitute because proper equipment and drugs are not available.

Current and future programs include: Bolivia, Dominican Republic, Ecuador, Kenya, Micronesia.

FORESTRY

Volunteer foresters are working in programs to increase industrial wood and field supplies through reforestation, stabilization and protection of watershed areas, and utilization and protection of forests. Activities include timber production, logging, surveying, timber estimating, park management, forest protection, forests stand improvement, flood control and wood products manufacturing.

Current and future programs include: Chile, Ecuador, El Salvador, Iran, Kenya, Nepal, Tonga.



Aggie Volunteer Vince Morabito (right) works with co-ops in the Atlantic Coast region of Honduras, helping strengthen co-ops and improving local agricultural methods. Morabito, who got his ag degree from California State Polytechnic College, and his wife Jean are stationed in Progreso. Their first child, a daughter, was born last March.

Volunteer A. Alfred Foster (left) is called "Doctor" by his Honduran friends, and not without reason. Foster, 56, holds a PhD. in plant pathology. He and his wife Grace are stationed at a government research and extension center near Comayagua. Here, he and a Honduran extension agent check one of the experimental farm's cucumber patches.

WHY THE PEACE CORPS NEEDS Farmers

Americans with basic farming know-how and experience are urgently needed in Peace Corps host countries today. These countries are looking not only for agricultural specialists who can identify problems, but for people with practical experience who can show farmers how to translate science into solutions.

Americans who have grown up on farms or who have spent their lives working the land possess a wealth of skills to offer developing countries.

A few examples of the need for practical farmers: A southern New Jersey farmboy who knows the ins and outs of the poultry business, from incubating chicks to selling eggs, is needed by Indian poultry farmers to help in upgrading their breeds and marketing the meat and eggs.

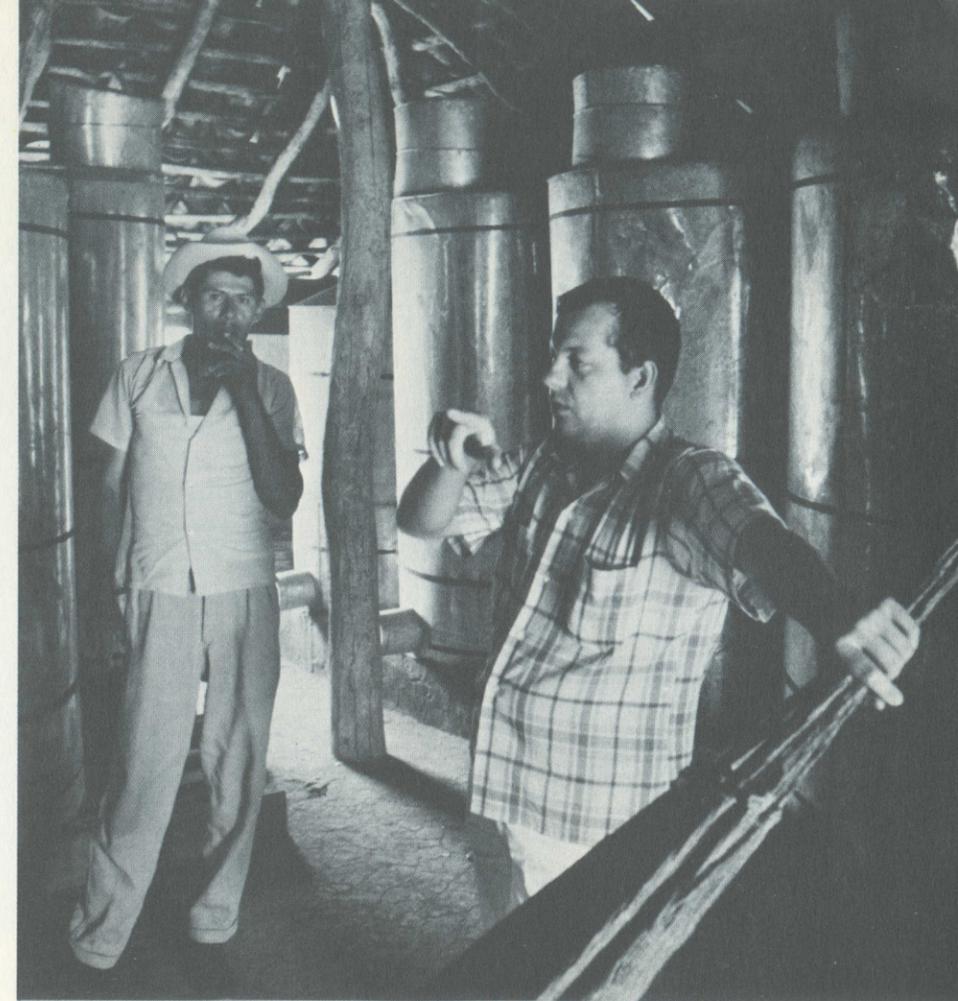
The farmers of Upper Volta are looking for Wyoming ranchers to

help raise their yields in pasturage and forage crops. Cotton, their primary cash crop, brings only about \$11 per year; an experienced cotton farmer from one of our southern states could help them raise their level of income by improving their cultivating practices and introduce improved varieties of plants.

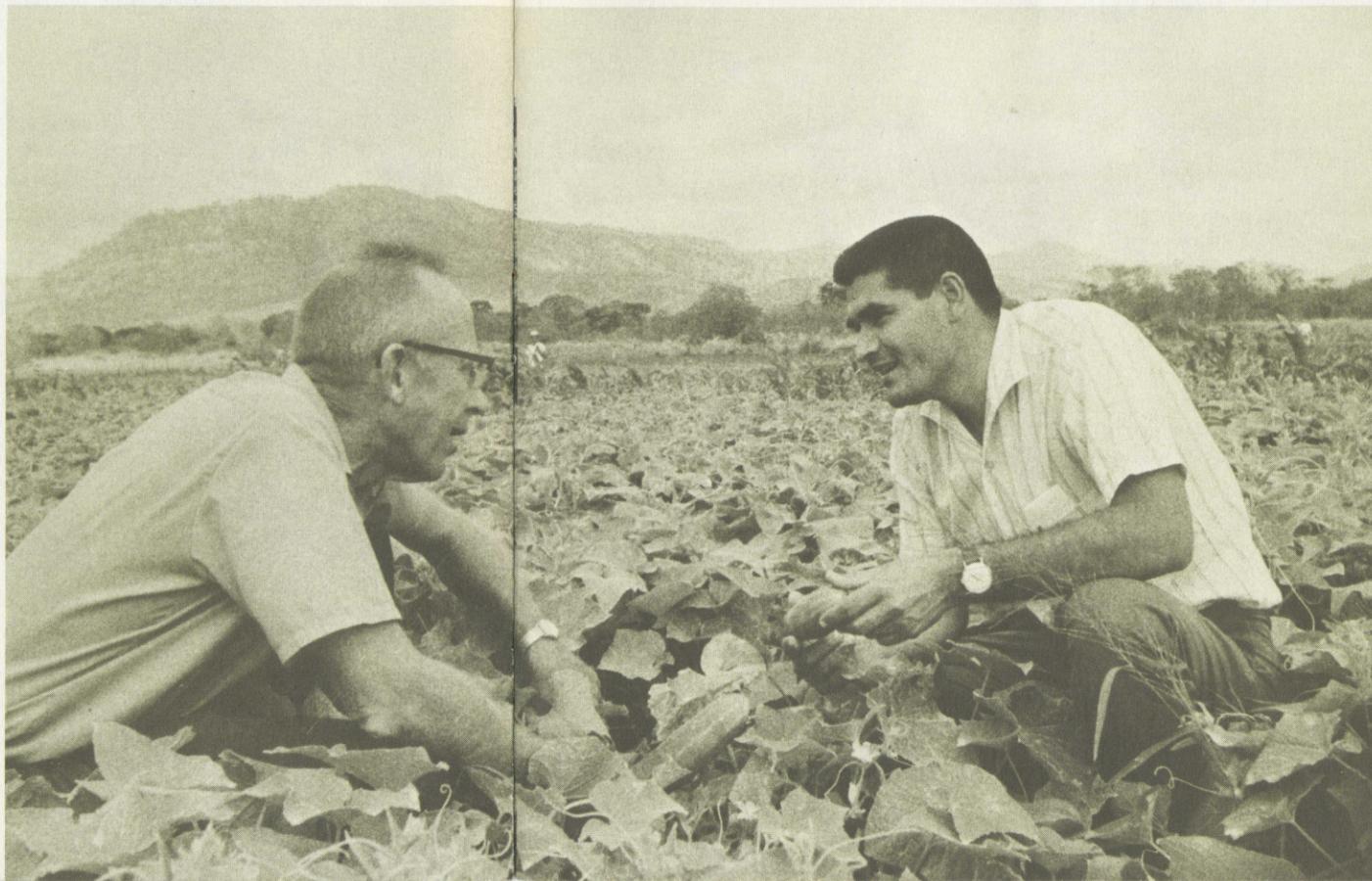
There's a Peace Corps assignment open in Ecuador for a retired dairyman from Wisconsin who knows how to care for and feed cattle and market dairy products. Experienced swine raisers are also needed in this Latin American country to improve breeds and introduce the necessary management and marketing practices.

The taken-for-granted skills of the American farmer that are needed to insure success in commercial farming are almost totally unknown in the countries where Peace Corps Volunteers serve. Sinking a well, fencing in stock, slaughtering livestock, smoking meat, preserving food and profitable marketing of produce are practices about which, for the most part, farmers of less developed nations are unaware.

An American farmer in the Peace Corps can also help overseas by uniting the strength of many farmers into a powerful whole. By organizing farmers into cooperatives, he shows



Volunteer Mike Lampe and his wife work out of Choluteca, Honduras, organizing farm co-ops. On-the-farm storage facilities are poor, so this co-op installed grain bins. Members sell their harvest to the co-op where it is held until they need it—generally at a time when market prices are high; then members can buy the grain back at only slightly more than they paid for it, but far less than market prices.



how they can work out solutions to common problems. These organizations can serve the farmer not only as sources of much-needed financial support, but also as a meeting ground on which to exchange ideas and experiences.

The traditional agricultural systems of the developing world are bogged down by centuries-old, tried and true but now out-dated methods which have never been challenged by the modern innovations of science. An experienced farmer in the Peace Corps can use his practical skills to bridge this new kind of "generation gap": Closing it can bring hope and progress a little closer to the forgotten people of developing nations.



Volunteer Mike Gill, an extension agent in Nepal, lives in the village of Basaiya, introducing high-yield grain varieties into the area. Here Gill and the District Agricultural Development Officer inspect rice plants at the local experimental farm.

Intern Programs

Peace Corps has arrangements with a growing number of leading agricultural schools for pre-service training of Volunteers who are nearing graduation in a wide range of agricultural disciplines, in home economics, and in such related fields as forestry, fisheries, food processing and land and wildlife conservation.

As most of these programs work, each school focuses on one overseas country or region and its food production problems.

Prospective Volunteers sign up as interns during their senior year, and receive special courses and seminars on the country involved. On graduation, Volunteers are given six to eight weeks of high-intensity language training and one month of cross-cultural training within the host country before beginning service.

Participating schools (and the country or region involved) include: Cornell (Colombia), University of Massachusetts (Kenya, Malawi), Iowa

State (Central America), Kansas State (Paraguay), University of Minnesota (Morocco) and Oregon State (Iran).

Peace Corps is now negotiating to expand this program to other major colleges and universities in time for 1970 summer graduates; for further information on pending programs write Office of Volunteer Placement, Peace Corps, Washington, D.C. 20525.

Forestry Degrees

Peace Corps now has programs requiring graduate foresters in seven nations. The largest, oldest and most diversified program is in Chile, where Volunteer foresters are involved in applied research, all phases of forest management, national park development and reforestation. Volunteer foresters for the Chile program are now trained at the University of Washington's College of Forest Resources which also provides technical assistance to Chile's

Ministry of Agriculture. The program allows academic credit towards advanced degrees for work by Volunteer foresters. Professional skills particularly needed are watershed management, forest pathology, forest management, wildlife management, wood utilization, pulp and paper, fire control, forest economics, silviculture, forest recreation and statistics.

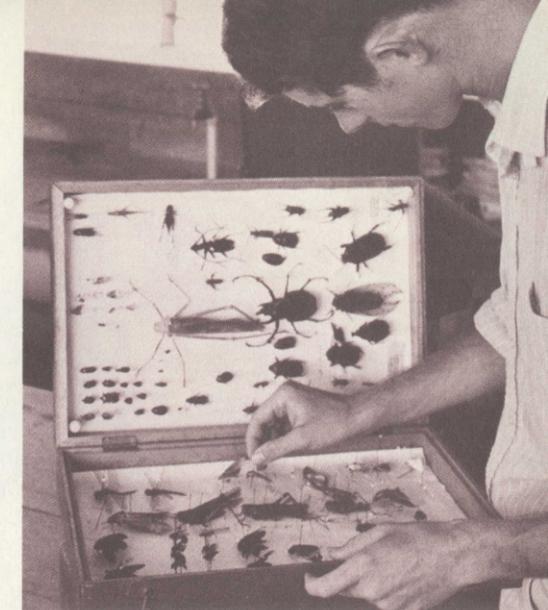
Other nations with current Peace Corps forestry programs include Nepal (Forestry Institute instructors, forest management and afforestation), Malawi (field surveying, map and plot preparation and measurement of plot yields), Fiji (forestation and forest management), Honduras (forest development and management), Niger (pilot work on introduced species for wind erosion control), Malaysia (afforestation and basic research towards development of pulp industry) and Iran (teaching in government school for forest rangers).

Future programs will include Ecuador, El Salvador, Kenya and Tonga.

Marine Sciences

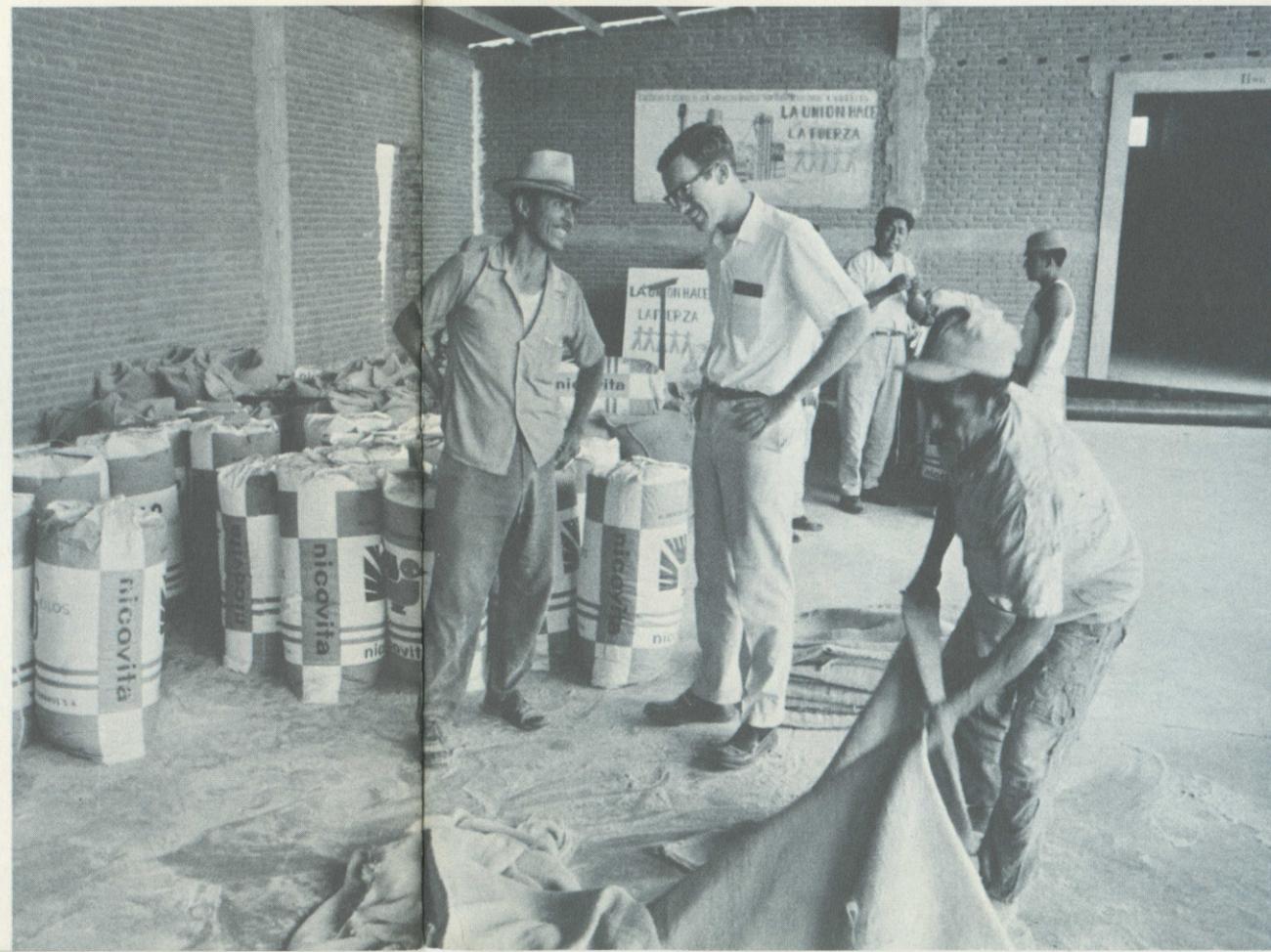
Commercial fisheries development is a small but growing area of Peace Corps involvement. Currently there are fisheries programs in 13 nations, and expansion to other nations is limited only by the lack of qualified Volunteers. Programs range in scope from Central America, where Volunteers are working with the Food and Agriculture Organization and the fisheries agencies of six nations to develop a regional commercial fishing industry, to a more modest resources survey project in Malaysia.

Volunteers in the Central American program include marine biologists, economists, and specialists in fish processing, fishing gear and marketing. Their goal is to strengthen national fishing administration and planning, introduce new techniques, conduct general resources surveys and to develop and apply marketing



Volunteer Erik Sorensen took his biology degree to Malaysia where he is teaching Junior Agriculture Assistants at the government training center in Turan, Sabah. Erik teaches three hours a day, emphasizing practice rather than theory, and spends the rest of his time with students in the lab or at one of the school's demonstration projects. On field trips, he and his class collect and identify insects as part of their training.

Volunteer Hank Coleman advises a number of ag co-ops in the northwestern Peruvian town of Tumbes. This one, San Pedro de los Incas, built and operates its own rice mill.



and production techniques.

In Chile, the Peace Corps fisheries program includes analyzing fish products and their market potential, research on bivalves and crabs, and the design and implementation of fresh-water fish culture projects and basic limnological research.

The Volunteers in Malaysia are developing a basis of operations for new fisheries association through studies on the economics of capture, preservation, distribution and marketing.

In Fiji, efforts include the development of fish and shrimp ponding and oyster farming and the introduction of bait and shrimp fishing.

Several nations have requested programs for fresh water fisheries, and a pilot program in India is now underway. Volunteers there are working in fish nurseries management at government fish farms, reservoir management and extension. Other fisheries programs include Kenya, Micronesia, Iran and Cameroon.

In addition, a number of other nations have Volunteers working directly with fishing co-ops, introducing new techniques and equipment.

