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CHARTING THE COURSE
WINROCK INTERNATIONAL ANNUAL REPORT 1993



C H A R T E R I N G

W i n r o c k I n t e r n a t i o n

Dear readers,

Winrock International has entered a new era. Public agendas are changing. Less emphasis is being placed on the problems of poverty and hunger that are at the core of Winrock's work. The organizations that fund such work are under great pressure. The fundamental relationship between agriculture and the environment is often obscured by what, superficially, appear to be more urgent concerns. Winrock must seek not only to understand the new agendas but also to help shape them.

Thus, in choosing a new president in June 1993, the board of directors sought an individual who had experience in and commitment to sustainable agricultural and rural development, and also the vision and dynamism to pilot Winrock through significant changes. We found such a person in Robert L. Thompson.

Bob came to us with a background of service as a development field worker, as assistant secretary for economics at the U.S. Department of Agriculture, as senior staff economist for the President's Council of Economic Advisers, and as dean of agriculture for Purdue University. His ability to synthesize from personal experience the governmental, academic, and practical aspects of development uniquely qualifies him to guide Winrock through developing a strategic plan for its future and implementing that plan.

We've asked Bob to share with you, in this annual report, his view of the challenges that face all international development agencies in these times, and his understanding of how Winrock's mission and activities require and prepare us to deal with them.

If Bob's overview can be likened to a crow's-nest view of development's boundless waters, then the companion articles and photographs represent the scenic vistas and glimpses of development as seen first-hand by the deckhands and told by the islanders where the Winrock ship has moored. This year, instead of trying to convey the tremendous scope of Winrock's efforts, we've focused on the stories of individuals—staff members, collaborators, and beneficiaries—that demonstrate the personal meaning of institutional resolve.

Within these stories, and throughout this report, you'll notice the names of those whose generosity helped to build the ship and sponsor its journeys. We hope you will choose to become one of them and join us on this voyage.

Sincerely,
Colin G. Campbell
Chairman of the Board

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Charting the Course

By Robert L. Thompson



For any organization, a new administration usually means a review of current priorities. When I joined Winrock International in July 1993, I asked my new colleagues to think through with me the implications of the rapidly changing environment for Winrock's future direction and priorities.

To paraphrase the historian Arnold Toynbee, international development, like civilization itself, is a movement and not a condition, a voyage and not a harbor. While we alone cannot decide where the world in which we work is bound, we are charting a course for Winrock's voyage.

Winrock International's mission is to help reduce poverty and hunger through programs with lasting benefits. As we look to the next century, we see several problems that our mandate requires us to address.

Although enough food is available today to feed the people of the world, people are still hungry because they lack the money to buy food or because the marketing system doesn't reach them. We must continue to invest in broad-based economic development so that poor people in developing countries can gain access to adequate nutrition.

Income growth also greatly affects food demand. As per capita incomes grow and people have more buying power, they upgrade the quality of their diets. This can place as much pressure on food demand as population growth.

Although enough food is available now, the surpluses of the 1990s have been largely the result of subsidy policies on both sides of the Atlantic

that have masked the underlying trends of income growth and population growth. These surpluses have allowed governments in low-income countries to ignore development of their agriculture. And agricultural production is not now regarded as a priority by international aid donors. But because many of the subsidies that caused these surpluses have been cut drastically in recent years, the surpluses that have masked the underlying global food problem are shrinking.

By the middle of the next century, the world's farmers will need to grow two-to-three times as much food as today. The food supply could be increased by farming more land. But doubling or tripling food production this way will seriously damage the environment, as forests are cut and more fragile land is plowed. This will also destroy wildlife habitats and biodiversity, and increase soil erosion and desertification.

To avoid environmental disaster, we need to be bringing the best in science—from ecology to biotechnology—to bear to maximize productivity on the fertile, nonerodible soils. This will be possible, however, only if we make investments today in the people and the institutions that will develop the needed technologies and help transfer them to farmers. Increasing food production while protecting the environment is one of Winrock's highest priorities.

Yet, agricultural development is not enough. It is not possible to eliminate the poverty of all rural people by making their farms more productive—whether we're talking about the delta of Bangladesh or the delta of Arkansas. There simply is not enough land per person to allow every rural resident to grow and sell a large enough volume of food and fiber to provide a satisfactory income, no matter how productive the technology.

To solve the problem of rural poverty it is necessary to increase off-farm employment opportunities, including enterprises that add value to the raw products of the land.

Winrock International helps bring about the creation of rural jobs in environmentally friendly enterprises. The ways that Winrock attempts to expand food production and rural employment while protecting the environment include the following:

- We train the researchers and trainers, who in turn work directly with farmers—the ultimate beneficiaries. For example, the Sasakawa African Fund for Extension Education Project, funded by the Sasakawa African Association, strengthens graduate-degree programs of three African universities and provides degree training opportunities for extension workers from Benin, Ghana, and Tanzania.
- We strengthen institutions that help educate, conduct research, transfer technology, and analyze policies. Without applying improved technologies and accommodating public policy, farmers cannot progress. Winrock's collaboration with the Agency for Agricultural Research and Development in Indonesia, is an example that goes back more than 30 years. This relationship has trained scientists and designed and built research facilities to strengthen Indonesia's national agricultural research system. The current phase is concentrating on improving the management skills of its personnel in planning, programming, monitoring, evaluating, and providing financial and economic analysis. The project is a model for many other agricultural research support projects.
- We develop human resources. We participate in educating and preparing individuals to identify and overcome barriers to development

within their own countries. For instance, this year, through our ongoing African Women Leaders in Agriculture and the Environment Program, we helped form national action committees in Côte d'Ivoire, Kenya, Mali, Senegal, Tanzania, and Uganda to establish professional associations for women, devising campaigns to encourage younger females to pursue studies in the agricultural and environmental sciences, and setting up gender resource centers to incorporate gender issues into research and professional development. The program is funded by Winrock and many other donors.

- We provide policy analysis and assistance. We help governments examine how their existing laws and regulations affect rural people and whether or not they impede food production. We help them craft policies that foster agricultural and economic development in environmentally sensitive ways. One project is strengthening the capabilities of Nepal's Ministry of Agriculture and related institutions by sponsoring graduate-degree fellowships at Asian universities. It provides grants for research and seminars, sponsors nondegree training, and conducts research. The project's success has led to further support from the Ford Foundation, the U.S. Agency for International Development, and the German Agency for Technical Cooperation.

These are a few examples of how Winrock programs and projects are making enduring improvements in human welfare.

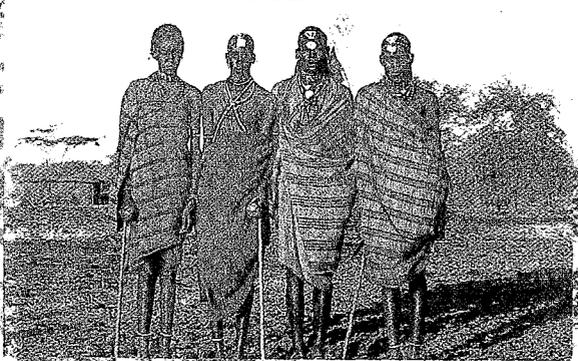
Winrock not only works to reduce poverty and hunger in other countries. We also create and implement programs that are tailored to the needs of low-income rural communities here in the United States by developing enterprises that create jobs and that help farmers and foresters make productive use of their resources.

Unfortunately, many donor organizations have reduced commitments to long-term agricultural and rural development programs. Humankind will pay a high price for this shortsightedness in the next century unless the necessary financial resources are invested to develop the means to expand food production and rural employment while protecting the environment.

We are grateful to those who have enabled us to continue our work through their gifts, grants, and contracts. Winrock International is fortunate to have a modest endowment. But our programs are supported principally by the generosity of other organizations and individuals. And there is much more to be accomplished.

Trusting in the continued backing of those who share our vision and commitment, we are plotting the course for Winrock International into the 21st century. Our strategic planning process will ensure that we are addressing the most important problems of this rapidly changing world in the most efficient and effective way possible. We are engaging the entire staff and many outside stakeholders in formulating their aspirations for Winrock and their ideas for achieving them. This evolution will give us a clear vision of our direction and, allowing innovative strategies to emerge, will enable us to move toward that target.

Every navigator knows that, though the line drawn on a chart is a direct route, a vessel's course is swayed by weather and currents. When Winrock is buffeted by the winds of change, we take our bearings by relying on the principles described here, and we will sail on.



Mission Statement

Winrock International Institute for Agricultural Development seeks to reduce poverty and hunger in the world through sustainable agricultural and rural development and enhancement of the rural environment and natural resource base. Winrock helps people expand their institutional and human resources, design and implement environmentally sensitive, sustainable agricultural systems, and improve policies for agricultural and rural development.

Winrock is an autonomous, nonprofit organization whose activities are funded by grants, contracts, and contributions from public and private sources.

The institute is recognized as a private voluntary organization by the U.S. Agency for International Development. Winrock International is exempt from income taxation under Section 501(c)(3) of the Internal Revenue Code, and contributions to the institute are deductible from federal income tax under code Section 170(b)(1)(A)(vi).



Bringing technology home

"It seems to me, a chicken likes wood heat," says Harvey Bates.

He should know. As a contract grower for a major poultry company, Bates and his wife, Kathi, move four to five flocks of chickens a year through each of their two broiler houses at Prim, Arkansas.

"The company furnishes the feed, the chickens, the processing," Bates says. "It's our responsibility to take care of the chickens—keep them warm in the winter and cool in the summer."

Until 1993, Bates kept his chickens warm with a cord wood-fired furnace, backed up by a butane heater. Then Winrock International invited him to participate in a demonstration project.

The U.S. Division's Biomass Utilization Program already has established the value of pellet-stove technology for residential use through a 21-site demonstration in northwestern Arkansas. Now, according to Jim Wimberly, the program's director, it is assessing the technical and economic feasibility of using commercial-scale pellet-fired furnace systems in Arkansas.

Sawmills, paper mills, and other forest-products manufacturers generate millions of tons of sawdust each year. While some of these "residues" are used, sawdust often piles up, creating costly disposal and environmental problems. If, however, the excess sawdust is processed into pellets, it can be used as fuel in specially designed stoves and furnaces.

In 1993, the program installed commercial-scale furnaces at four test sites in Arkansas, including two poultry farms.

"Arkansas is the largest poultry producer in the United States," Wimberly says. "We have about 7,000 poultry growers, including about

4,800 broiler producers with about 17,000 chicken houses. Space heating is one of their largest expenses. If only a quarter of those broiler houses used wood-pellet furnaces, they would stimulate a US\$ 15 million dollar a year wood-pellet fuel industry in Arkansas."

Harvey Bates tends to take a more personal view of wood-pellet technology.

"One big advantage to this system," he says, "is that I don't have to get up in the middle of the night to fire it."

The system installed at his farm includes a 500,000 Btu-per-hour pellet furnace inside the broiler house with a 10-ton pellet storage bin and an automatic fuel-feeding system.

Bates says convenience is not the system's only advantage.

"You don't have much ash at all," he says. "The pellets almost burn up. And it's really clean burning. There's hardly any smoke. And, besides that, it produces much drier heat than butane. I have better luck with my chickens if I can keep down the humidity in the houses."

Bates's experience with the pellet-stove project has convinced him that the technology has great potential in Arkansas.

"I think it could help a lot of people," he says. "Number one, it could help the sawmills that need to get rid of sawdust. Number two, it could help the farmers keep their costs down during the winter. But it will take a while to catch on, probably, like anything new."

The Northwest Arkansas and Ozark Foothills Resource Conservation and Development Councils are collaborators and cosponsors with Winrock on the Pellet Furnace Demonstration Project. Primary funding was provided by the Southeastern Regional Biomass Energy Program and the Arkansas Energy

Office. Other direct and in-kind contributions are provided by the RC&D Councils, the USDA Soil Conservation Service, the host sites, and Winrock International.

Strengthening rural economies

Annett Pagan's answering machine probably has 25 messages waiting on it right now, even though she checks it regularly. The number of calls she receives from Arkansas's secondary wood products manufacturers has mushroomed.

"At first, I got about five to seven calls a day," she says. "Now the calls are constant."

Pagan is program coordinator for Winrock's Arkansas Rural Enterprise Center, which was formed to strengthen the state's small- and medium-sized manufacturers. Nearly 60 percent of Arkansas's 2.4 million people live outside metropolitan areas, and about 30 percent of the state's rural workers are employed in manufacturing. Most work for poultry processing and industrial forestry companies. The remainder work mostly for manufacturers that have fewer than 250 employees—many have fewer than 20 workers. Small- and medium-sized manufacturers tend to fall through the cracks. The center is busy filling these cracks.

The center is focusing, for now, on an industry that is strategically important to Arkansas's rural economy: secondary wood-products manufacturing. More than 650 Arkansas firms, employing some 16,500 workers, make everything from pallets to veneer to trusses to furniture. Most of these firms are in rural counties.

"Our first big accomplishment," says Pagan, "was the establishment of the Arkansas Wood Manufacturers Association. It was chartered in

February of 1993, and it had over 100 dues-paying members by the end of the year, although state-wide, the industry had never had any organization."

The association saves busy manufacturers time. For instance, not long ago a manufacturer called Annett and said, "I just got a stack of paper from the Environmental Protection Agency. Can you help me find out whether the law applies to us and what we're supposed to do with these forms?"

"So I called the Department of Pollution Control and Ecology—they have hired a liaison between the agency and manufacturers. I asked the liaison about it, and he said, 'Call your manufacturer back and tell him I'm going to come up there and help him fill the papers out.'"

The most important benefit of membership, though, according to Pagan, is the opportunity to get to know other Arkansans in the same manufacturing sector.

"At these meetings, I see them talking to each other about their problems and possible solutions. I see them making new business connections. When a pallet manufacturer attends a meeting with a furniture manufacturer who ships on pallets, they're bound to find out they have something to offer each other.

"And when a manufacturer experiences problems, we find them consultants who can help solve their problems," continues Pagan. "When we see the same problem in different plants, we organize a technical workshop on the issue or we ask a manufacturer who has solved the problem to write an article for the association newsletter. After a technical workshop on wood finishing, Bob Maloney, a Trumann, Arkansas, furniture manufacturer said, 'I could have saved my company a million dollars if I had sat through this workshop a year ago.'"

Pagan says the association has also created international opportunities.

"Dick Udouj, one of our members, was invited to go to Ghana to work with some wood manufacturers," she says. "He assessed some of their operations and gave them advice. And I went to Honduras to meet with two manufacturers who were looking for U.S. partners. This kind of exchange is going to grow."

Sandra Miller, the center's director, says development organizations have traditionally focused job-creation efforts on the nonprofit and public sectors.

"If you're really serious about job creation," Miller says, "you have to learn to work creatively with the private sector, matching your goals for development to the goals of private entrepreneurs. The most tangible, lasting jobs are in the private industry."

Pagan says her work with the Arkansas Wood Manufacturers Association will not go on forever.

"Eventually, they'll be able to sustain themselves, and we'll look at other industries and other projects," she says. "But, for now, I do a lot of listening, ask a lot of questions, provide what information I can, and find resource people who can help the members solve their problems. That adds up to putting more people to work by helping these manufacturers expand their operations, and giving them a better chance to compete in a global economy."

Supporting research for the future of rural Africa

"It is so different here in the United States. Research is funded by a lot of agencies, a lot of business concerns. If you write a good proposal,

perhaps you will get funding. It is not the same back in Africa," says Samuel Asuming-Brempong, a 1993 grant recipient from the African Rural Social Sciences Research Network.

The program, which is funded by the U.S. Agency for International Development and the Ford Foundation, has been managed by Winrock International since 1987. It is directed by David Seckler, who heads Winrock's Center for Economic Policy Studies, and managed by Vicki Walker in Arlington, VA, and Dirk Perthel in Abidjan, Côte d'Ivoire.

The program makes to individuals grants of up to US\$ 5,000 for research that supports African rural development. Each grant recipient must be experienced in conducting research, have a minimum of a master's degree, and be affiliated with an African institution.

"The idea," Walker says, "is to encourage good research in the social sciences that is related to rural development. We want to add to the base of primary data that is available about African issues.

"At the same time, we ask the researchers to look at the implications for policy reform. The research should be useful to African decision-makers in supporting good policies or formulating new policies."

Asuming-Brempong is now on study leave from his teaching position at the University of Ghana to pursue a Ph.D. in resource and environmental economics at Michigan State University. He says the grants have been a boon to African researchers because resources for research are scarce within the continent.

Asuming-Brempong learned of the research-grant program through a friend and fellow scientist who, as a member of the African Rural Social

Sciences Network, had received a flyer about the program and shared it.

"Each cycle, we mail brochures describing the program—suggested topics, eligibility requirements, application procedures—to about 1,000 libraries, universities, and individuals, mostly in Africa," says Walker. "And we follow up by putting the same information in our newsletter. We receive an average of 200 to 250 proposals in response, but we're able to fund only about 25 at one time."

According to Walker, the program seeks balance and diversity among the topics and the researchers, themselves. "Early in the program, most of the work was in agricultural economics," she says. "Now we strive to make at least 25 percent of the grants for research in home economics and social sciences: political science, anthropology, and sociology. About 20 percent of the grants go to women scientists; we want to increase that to 25 percent. And we want to increase the representation of French-speaking researchers to 15 or 20 percent."

The benefits of participating in the program go far beyond the opportunity to do a small research project.

"I was in Ghana when I got the project," Asuming-Brempong says, "so I was invited to a meeting of the West African network. I got to meet the other researchers. I got to see what others were doing. I got help with what I was doing. And I got many ideas for other work that needs to be done in my area.

"That kind of interaction is very useful. The whole program meets a real need in Africa. And it met a need I had. When you come out of school, you have so many aspirations. You want to do something. You want to build your profession. This project helps make that possible."

Making the connection with renewable energy

In many parts of rural India, electric service is intermittent at best. And many families aren't hooked up to the grid. For them, power to run lights, cooling fans, refrigerators, or pumps that move water from the well to the house is a luxury they can't afford.

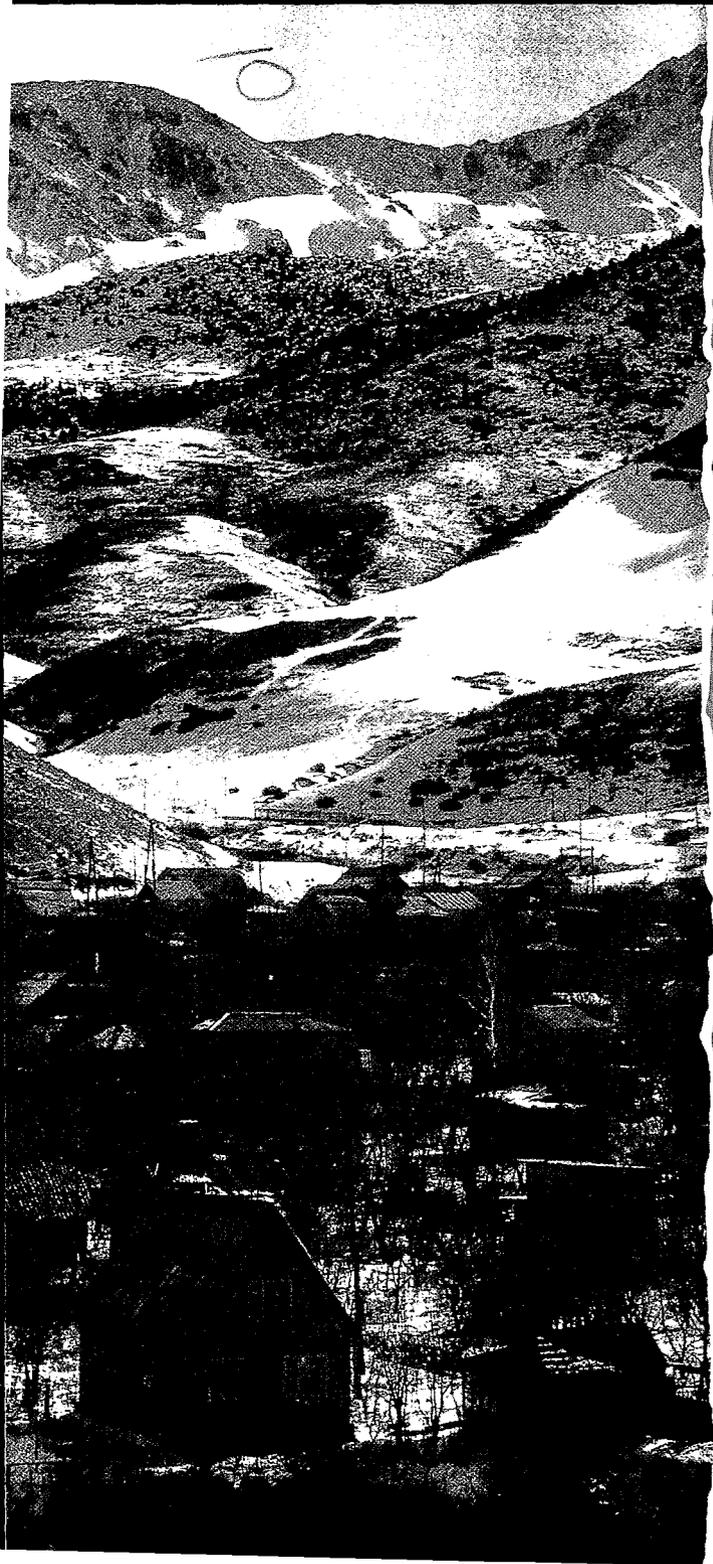
"Electricity provides some of the basic necessities of life," says Ajit Gupta, director (power) of India's Ministry for Non-Conventional Energy Sources. "In the rural sector, power is used for agriculture, small-scale industries, and social and community uses."

Yet more than two billion people in rural areas of developing countries do not have access to electricity and the benefits it can provide by improving access to communications, education, health care, and potable water. Without power, rural communities will have a difficult time creating the off-farm employment opportunities needed to improve the quality of life as populations grow and agriculture becomes less labor-intensive.

Winrock's Renewable Energy and Environment Program (REEP), in cooperation with the U.S. Agency for International Development, is working to expand the supply of energy available to rural communities. One focus is India.

"Traditional approaches to providing rural power services have failed in many countries," says John Kadyszewski, Winrock's program director for REEP. "In India, we are trying to create a model in which rural industries produce reliable power using local fuels. Not only can these industries increase local energy availability, they can also create new employment opportunities and sources of income for rural people."





One industry taking steps to produce significant amounts of energy is India's sugar industry, the largest in the world. The industry uses its processing waste—the crushed sugarcane stalks known as bagasse—as a fuel to generate electricity and steam to run its factories. Sugar factories in India are now moving to produce additional power and deliver it to the electric grid for local consumption. Before they do this, however, policies and regulations had to change and investment risks had to be clarified.

Working with local institutions, REEP helped bring state governments and the sugar industry together to develop new policies that would enable sugar mills to provide power to the electric grid. Winrock staff and technical specialists from private industry studied three mills in the states of Tamil Nadu and Maharashtra to evaluate the technical and commercial opportunity. Once the benefits were clear, REEP presented the findings to industry and government officials in a series of workshops. Several local organizations prepared similar studies.

The State Electricity Board of Tamil Nadu announced in June a new policy that made expanded power production by sugar companies attractive. Two mills studied in Tamil Nadu have decided to build larger power plants. The first plant is expected to begin delivering power by March 1995. Together, the two mills will supply enough power to meet the needs of roughly half a million rural households.

"Our sugar production is down," says Ram V. Tyagarajan, chairman and managing director of one of the mills, Thiru Arooran Sugars, Ltd. "We have to look at other earning sources. We see [power production] as a very attractive business opportunity. We could very well have a situation where

sugar could become the by-product and power the main product."

Winrock's work in India continues. "Drawing on global experience, we are helping put together a training program for sugar-factory managers that will broaden understanding of the risks and benefits associated with increased energy production," says Kadyszewski. "We are also working with local institutions to help sugar factories increase their power production by using other locally available fuels."

This article is based in part on "Renewable Energy Sources: Cost-effective Indian Alternatives to Fossil Fuels" by Laura Lorenz Hess, prepared for the U.S. Information Agency's SPAN magazine.

Helping the teachers teach

In the African region that lies south of the Sahara, farmers have clung to farming methods that have become less suitable as the population has burgeoned and the soil's fertility has declined. Unless these farmers can learn the appropriate use of improved technologies—seeds, fertilizers, and farming methods that could increase crop yields in an environmentally friendly manner—sub-Saharan Africa faces food deficits of 25 million tons to 30 million tons within the next 20 years.

In response to this crisis, the Sasakawa Africa Association (funded by Japan's shipbuilding industry foundation) has joined forces with the Global 2000 Carter Presidential Center, chaired by former U.S. President Jimmy Carter. Their approach: Improve agricultural extension, the system that teaches, motivates, and supports farmers in adopting more-productive practices.

"The agricultural extension staff who work with these farmers," says Moses Zinnah, "must possess technical skills—and human relations skills—that enable them to respond to farmers' needs."

Under the Sasakawa African Fund for Extension Education Project (SAFE), managed by Winrock International, Zinnah is preparing extension workers to do a more effective job of communicating information to farmers about farming practices. He is based at Ghana's University of Cape Coast, one of three African universities at which the SAFE Project is establishing innovative programs for training extension workers.

Zinnah helped to develop the curriculum for a bachelor's degree program that will upgrade the technical and communication skills of mid-career extension officers who already have some postsecondary education. The first group of students—17 men and 5 women—were chosen in 1993. Within four years, 150 extension officers are expected to be enrolled in the program.

Zinnah received his Ph.D., under a Fulbright Fellowship, in agricultural and extension education from the University of Wisconsin, Madison. He has worked with smallholder farmers in Côte d'Ivoire, Guinea, and Sierra Leone, as well as in Liberia.

"My professional experience over the last dozen years at the farmers' level convinces me," he says, "that smallholder farmers hold the key to increasing and sustaining agricultural development in Africa."

Zinnah now spends about 60 percent of his time teaching and advising students who will soon return to their jobs with ministries of agriculture and help those farmers turn their agricultural systems around.

The SAFE Project, which operates in Benin, Ghana, Nigeria, Tanzania, and Togo, also manages three doctoral fellowships for extension workers who have distinguished themselves through outstanding grassroots service.

"All of these efforts focus on improving interactions between extension workers and farmers," says Roger Steele, who oversees the SAFE Project from Winrock headquarters, "because the technologies that farmers need are often already available. We have to empower farmers so that they can discover how new technologies enhance traditional knowledge and farming practices. Extension officers play a vital role in achieving this.

"We hope that these students will emulate Moses. He received some assistance in getting his education. Now he's applying his skills to the problems of Africa."

Honoring our past and preparing for tomorrow

Winrock International's increasing focus on environmental issues relating to agricultural sustainability led to the creation of a small committee in May 1993 that sought out major areas of concern to highlight in a forum to discuss the latest findings in these areas.

The committee chose to execute this plan through a symposium in honor of Winrock's founding president, Robert D. Havener, who was retiring after eight years of service. The seminar was an appropriate way of expressing our appreciation, and that of the international development community, for his lifetime of service and leadership in fighting hunger and poverty.

In tribute, Winrock International organized and presented a symposium, Environment and Agriculture: Rethinking Development Issues for the 21st Century, in May 1993 at Winrock's conference center on Petit Jean Mountain. That symposium

- provided an overview of the state of agriculture's natural resource base relative to food requirements for the future
- highlighted major environmental concerns that will influence future agricultural production
- assessed emerging technologies and their potential impacts on the resource base and the environment

"Rather than recount Bob Havener's career," says John DeBoer of Winrock's Asia Division, one of the symposium's organizers, "we wanted to have a forward-looking conference to help us, our board, and the international community look at the issues that will affect agricultural development over the next 10 to 15 years. We knew the most fitting way to honor Bob would be to push ahead with the work to which his career has been dedicated."

The symposium drew 52 participants: scientists and board members affiliated with Winrock during Havener's tenure and distinguished representatives of other international development organizations and agencies. The meeting was sponsored by grants from the Ford Foundation, Rockefeller Brothers Fund, the Winthrop Rockefeller Foundation, and a matching contribution by Winrock International.

Proceedings of the symposium, including not only the papers that were presented but also summaries of open discussions, are available from Agribookstore in Arlington, VA.

Sharing knowledge and experience

"I wanted to check out the quality of their food processing, so I went into a grocery store. In there, I saw some baby food. All they had was fruit juice, natural strength, not even concentrated. And in every pint bottle they had, mold was growing on top of the juice.

"I thought, 'How can they feed this stuff to their babies?' But, as far as I know, they haven't killed off a whole generation. So I bought some and tried it, after I skimmed the mold off, of course.

"It didn't even make me queasy. It turns out, their canning processes are so inadequate, the mold on top was aerobic, like a bread mold. Harmless. The bottle wasn't sealed well enough for anaerobic (organisms that live without air) activity to occur."

Les Diffenbaugh slaps the table with his palm as he recounts one of his many experiences as a volunteer to Turkmenistan, one of the Central Asian Republics, through Winrock's Farmer-to-Farmer Program.

"They have absolutely no grades, no standards, no set policies, no uniformity," he continues. "The quality of what they produce just wouldn't meet western expectations."

Diffenbaugh, the owner and operator of a 10,000-acre California wheat farm, has come to Winrock headquarters to meet a fellow volunteer, Vern Pederson, a food-animal veterinarian from Washington. They have been working together to evaluate the experiences of the Farmer-to-Farmer volunteer teams that visited the Central Asian Republics during 1993 and to recommend adjustments to the program.

"We've looked at 53 reports of projects from last year," Pederson says. "We're trying to assess

the impact of the volunteer visits and establish a focus."

The Farmer-to-Farmer Program, which is funded by the U.S. Agency for International Development and managed and implemented by Winrock, sets up exchange visits that allow farmers and other agricultural professionals from the United States to share their expertise with those of other countries and, in return, to learn from them.

"We'll probably field well over 100 volunteers in 1994," says David Norman, manager of the project at Winrock headquarters. "We continue to do one-on-one technical assistance in our global program, which pairs farmers from the United States with farmers in Central and South America and in Africa.

"But we now have a separate program for the New Independent States—the former Soviet Union—that operates a little differently. After all, these aren't developing countries. They are countries undergoing restructuring. The problems are quite different."

"Our primary concern in Russia and the Central Asian Republics is agribusiness," says Andres Martinez, senior program officer and director for Farmer-to-Farmer. "This means going beyond agricultural production to assisting with postharvest activities: storage, processing, transportation, and marketing. We are helping farmers, helping cooperatives, and helping governments."

Norman says, "They're trying to move from a command economy, where orders came down from Moscow on everything from how strong to make the coffee to how many hectares of potatoes to plant. Now they're faced with trying to understand how to operate in a market economy and how to determine for themselves what's most efficient and most profitable."

Diffenbaugh says the Central Asian farmers have been up front about their needs.

"They're great hosts," he says. "They're very candid about their hopes and constraints. These are smart people who can boil down their needs to what is basic and important. They set priorities much the same way that we would. They aren't asking for multimillion-dollar projects. Their needs are simple and clear.

"Vern ran into some dairy farmers who knew they could increase the pregnancy rates of their cows if they had effective methods for detecting estrous cycles. All it takes is a simple kit that all of our dairy people have. They knew about it, but they didn't have access to the kits. So Vern left behind all the kits he had.

"Those are the most important things they need, I think. Little things that they can do themselves."

Pederson says volunteers also encourage changes in the local farmer's thinking habits.

"When I was there, in early May, several of the farms I visited were running out of silage," he says. "The farmers were feeding the cattle dried cornstalks or whatever they could find.

"The alfalfa was coming on pretty good, so I said, 'Why don't you go out and chop some of it for the cattle?'"

"And they said, 'No, we can't do that. The official cutting date is not until May 20.'"

"They are used to doing everything by the book, whether it makes sense or not."

Pederson says the long-term benefit of the program, in addition to goodwill, will be increased trade between the United States and the NIS.

"When Les tells you their products aren't export quality now," he says, "that doesn't mean they won't be in five or ten years. The potential

for rapid improvement is greater there than anywhere else in the world. You're dealing with potentially rich countries. Kazakhstan has the largest undeveloped oil fields in the world.

"So, eventually, they will be able to buy anything they need or want. It will benefit the United States to deal with such countries, who can pay for what they buy. And you could create a lot of jobs in the United States if you opened up trade with these countries.

"You don't want to just send idealistic, altruistic volunteers over there. That's naive. You need entrepreneurs to go over there and look for opportunities. This is what will stimulate their economies.

"If Winrock will find a way to disseminate the information that the volunteers have collected, the entrepreneurs will come."

Breaking the cycle of environmental degradation

"I'm conducting my own research," Daniele Perrot-Maitre says, "as a way to involve myself directly in the issues."

Perrot-Maitre is the program leader for Winrock's Environment and Sustainable Development Program in the Dominican Republic. She arrived in Santo Domingo in January 1993 to lead the four-year project sponsored by the Ford Foundation.

"The aim of the program," she says, "is to strengthen local capacity to identify natural resource problems and solutions and develop policy recommendations. It has three components: providing small grants and technical assistance for research, promoting networks among

organizations working on environmental issues, and offering short-term, in-country training."

These efforts are aimed at stemming or reversing pollution and environmental degradation in the Dominican Republic caused by inappropriate agricultural, agroindustrial, and industrial production practices and deforestation of much of the island.

In its first year, she says, the program awarded nine grants—all to individuals and nongovernmental organizations—for projects ranging from analysis of the political economy to participatory research, involving a group of women farmers, into the role of women in using and managing natural resources. From this research will come recommendations "that have direct implications for the programs of local institutions."

Perrot-Maitre works with a steering committee—which includes representatives from the government, nongovernmental organizations, grassroots associations, and research institutions—to choose program activities and encourage exchange and participation from each sector.

In addition to these administrative responsibilities and her obligation to provide technical assistance and act as a mentor to grantees, Perrot-Maitre, who is a natural resource economist, is carrying out research of her own.

"I'm studying the importance of animal traction for rural development and the sustainability of agriculture in the Dominican Republic," she says. "Besides providing useful information, this part of the project provides a training exercise and learning opportunity to the national researchers who work with me."

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International development is not glamorous work. Daniele Perrot-Maitre, a natural resource economist, is program leader for Winrock's Dominican Republic Environment and Sustainable Development Program. From her office in Santo Domingo, Perrot-Maitre shares this insight into the realities of working in a developing country.

"One little success that made all the difference in living and working here is having a car. But for eight months, the project's vehicle was stuck in customs—only two-and-a-half hours from where I live. Having no vehicle means spending a lot of energy to travel, feed oneself, and fight and bargain with taxi drivers. It also means getting drenched on occasion. There is no transportation when it is raining.

"Imagine my joy when the vehicle finally arrives. And my despair when I realize: I cannot drive it. The seat won't move forward enough. I cannot reach the accelerator pedal. A gentle touch from the tip of a very extended leg does not do it.

"For several days, I visited workshops, looking for someone who could adapt the pedal so I could reach it. No one could understand what I wanted. At one shop, the friendliest being was a cow peacefully munching on nearby bushes: Finally, I found someone who could both understand what I wanted and do the work.

"Then came the time to discuss, and bargain, and wait, and go, and come back, and discuss some more. Two days later, I got the innocent piece of metal that was going to change my life. I could drive. Rather, I could reach the pedal. Driving took practice because the first rule of driving, here, is that there are no rules.

"Working in developing countries, frustrations are countless. Fortunately, they are matched with joys and rewards."

Safeguarding Arkansas's environment

Which half of Paul Brown works for Winrock International?

As coordinator of the Poultry Litter Marketing and Utilization Project, half of Brown's salary is paid by the project, and half is paid by the U.S. Department of Agriculture's Soil Conservation Service (SCS). Brown's unusual work situation is the result of the mutual interest of Winrock and SCS in maintaining and improving Arkansas's water quality.

"I've worked for SCS for 31 years," Brown says. "The past 20 I've worked in the Arkansas delta. SCS has been involved with poultry producers for a number of years, helping them handle their litter properly to prevent pollution to streams and groundwater. When Winrock started up this project, SCS was naturally interested in helping in any way it could."



So SCS "loaned" Brown to Winrock for two years, contributing his expertise to the project and serving as liaison between the two organizations.

The project is a component of Winrock's Arkansas rural development initiative, which seeks ways to use the waste products of the agricultural and forest industries productively—keeping the state's waters clean and creating new jobs in the process. The poultry litter project works with existing businesses and helps develop new ones to market and move poultry litter from western Arkansas, where its build up is a potential environmental hazard, to eastern Arkansas, where it is needed as an organic soil amendment, and to surrounding states, where it can be used as cattle feed.

"Two environmental problems—water quality and soil fertility—are being solved by private industry without government having to regulate, or impose rules and fines, or even provide incentives," says Fee Busby, director of Winrock's U.S. Division, which is responsible for the project. "Around the world, we're finding that if we use a marketing approach and keep the well-being of people in mind, many environmental problems can be solved through the economic system, without relying on government regulation or handouts."

"The project itself will end in 1994," says Brown. "But the telephone hotline we've established—which puts the buyers and sellers of litter in touch with each other—is being picked up by the Arkansas Farm Bureau. We've reinforced the cooperative relationships among the researchers, the extension service, private industry, the farmers, all the players."

Other partners in the project include the Arkansas Delta Council, the Arkansas Soil and Water Conservation Commission, Oklahoma

State University Cooperative Extension Service, resource conservation and development councils, the University of Arkansas Agricultural Experiment Station and Cooperative Extension Service, and private industry. Funding is provided by the partner organizations, the USDA Sustainable Agriculture Research and Education Program, the Pew Charitable Trusts, and private investors.

"The important thing," Brown says, "is that we've created an awareness and a momentum that will continue after the project ends."

Neither half of Paul Brown works for Winrock International. All of Paul Brown works for Arkansas's environment.

Preparing a new generation

When Sitan Traore arrived in Hungary to begin her undergraduate studies in biology, she first had to practice using a microscope. In Mali, her home country, there had been only one microscope for her entire class.

When she became a biology teacher at one of the largest, best-equipped public schools in Mali, a few more microscopes were available. But she was the only woman biologist on staff. In a class of 45, only five of her students were girls. And many of the other female teachers saw their work as just a way to make a living.

After five years, Traore wanted to do more. "In Tennessee, I did my master's degree in medical entomology. I saw it would be good if I could do a Ph.D.," she says. "In Africa, there are so many diseases—in humans and animals—that are carried by insects. This is an important health issue. People are working on these problems, and I wanted to join them."

Through a colleague, Traore heard about Winrock International's African Women Leaders in Agriculture and the Environment Program (AWLAE), which is preparing a corps of African women for leadership and policy-making roles in their home countries. Traore applied to participate in the program and became the first recipient of the Robert D. and Elizabeth Havener Fellowship.

The fellowship was established in 1993 to honor Winrock's first president and his wife. Friends and colleagues of the Haveners, and other supporters who shared their concern about the urgent agricultural and environmental challenges in Africa, contributed over US\$ 600,000 to endow two fellowships at the University of Arkansas, Fayetteville. Traore began her studies there in the spring 1994 semester.

"I want to join the work to control river blindness," Traore says. "This disease is a big problem in Africa. It is carried by black flies.

"But I am learning research techniques that can be used with any disease caused by insects in any country. So even if a cure is found for river blindness before I get my degree, there will still be much work for me to do."

So far, AWLAE has sponsored 34 fellows from 11 African countries. Four of those fellows have completed their degrees. Other program activities extend to nine additional countries. The program is funded by the Banbury Fund, the Ford Foundation, the International Institute of Tropical Agriculture, the Rockefeller Brothers Fund, the United Nations Development Programme, the U.S. Agency for International Development, and private donors.



Bob Havener congratulates Sitan Traore, the first recipient of the Robert D. and Elizabeth Havener Fellowship.

As an AWLAE fellow, Traore has made a commitment to return to her country to pursue her scientific career; to participate in AWLAE activities such as leadership and gender workshops, networking events, professional conferences, and national and regional forums; and to act as a mentor in the professional development of other women leaders.

"We can promote young girls' interest in science," she says, "by explaining the impact they can have in improving conditions in their countries. Girls must be supported by women scientists acting as role models."

"Our biggest challenge," says Mah Coty-Peccoud, who manages AWLAE recruitment and placement from Winrock's Arlington, VA, office, "is to sensitize professional women to the problems of women in rural areas. We want them to pay attention, within their fields, to what is going on with rural women and to draft policies to help those women.

"Ms. Traore represents a new generation of African women," she continues, "who are committed to their studies and their work and who are willing to be the vehicle for change in women's roles in Africa. She deserved to be the recipient of the Havener Fellowship."

Continuing the commitment to conservation

One of the greatest challenges of international development work is making sure that a project's activities are either self-sustaining or no longer needed by the time the project ends.

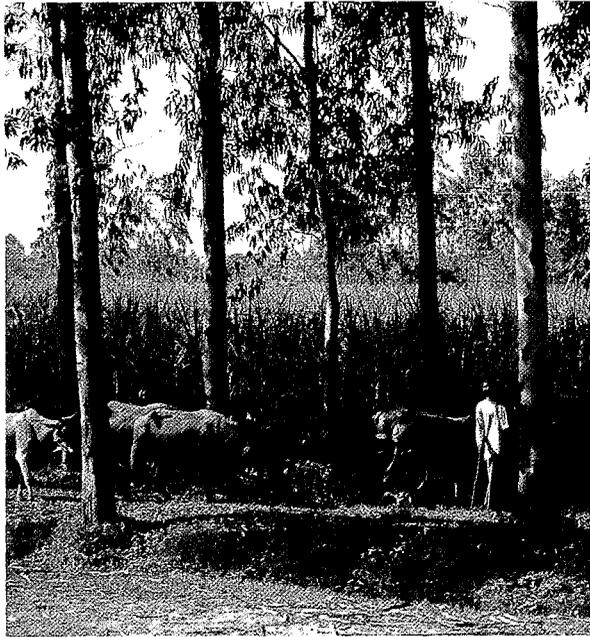
Since 1985, the Pakistan Forestry Planning and Development Project has seen nearly 150 million trees raised on more than 5,000 farm nurseries and these seedlings planted on more than 150,000 farms. At maturity, these trees will provide approximately 9 million metric tons of wood for use or sale by farm households.

The project, sponsored by the U.S. Agency for International Development, will end in 1994. While its legacy of tangible and intangible accomplishments may seem sufficient, the project formed a Nongovernmental (NGO) Grant Unit in 1992 to help prepare for that end.

"The idea," says Carol Stoney, who oversees forestry projects for Winrock's Center for Environment and Sustainable Agriculture, "was that nongovernmental organizations could take over some of the project's activities."

The unit has made about 60 small grants to more than 30 organizations—environmental groups, nature clubs, regional rural development programs, and grassroots community self-help organizations—to carry out local programs in forestry, natural resource conservation, and environmental protection.

"The unit's staff helps the organizations plan and implement their projects," Stoney says. "They also organize training courses for the grantees, and they monitor the project sites frequently to provide on-the-spot advice and to help solve problems."



Stoney says the grantees work with local farmers, schools, youth and women's groups, community organizations, and tribal assemblies to increase awareness of resource conservation issues at all levels of society.

She notes an unusual benefit of the grant program: "In a society that normally prohibits women from any publicly active role, many of the NGOs successfully involve women in all levels of project leadership and participation."

In recognition of the unit's efforts, the Pakistan Environmental Protection Foundation named it Environmentalist of the Year for 1993.

In 1994, the project will continue to strengthen self-sustaining activities to make sure that, when the project staff says good-bye, the benefits of its work will go on.

A profile in giving

While you wait to speak to Carl Whillock on the phone, a friendly, taped voice tells you, "The electric cooperatives in Arkansas are consumer-owned electric utilities. They are the power source for over 340,000 farms, homes, and businesses."

Whillock is president of both the Arkansas Electric Cooperative Corporation and the Arkansas Electric Cooperatives, Inc.; so he is arguably one of the busiest men in the state. But he manages to find the time not only to be an active member of Winrock International's board of directors, but also to be one of Winrock's most energetic fund raisers.

"A while back," Whillock says, "Winrock asked me and a few others what we thought about forming a President's Arkansas Advisory Council to help identify program opportunities, generate support, and raise some money for Winrock among business and community leaders. So I got involved with the group in the beginning, and then they asked me to serve as chairman."

"While he was chairman of the council," says Kathi Jones, who helps direct Winrock's fund-raising efforts, "he oversaw one campaign that raised US\$ 250,000 to match a challenge grant for Winrock to expand its conference facilities, and another that raised nearly US\$ 300,000 in start-up funds for the Arkansas Rural Enterprise Center."

The center, a unit of Winrock that was launched in 1992, helps create jobs and raise incomes in rural Arkansas. "The Arkansas Electric Cooperative Corporation is a major supporter of the center," Jones says. "And Carl has used his company's support of the center to leverage gifts from other Arkansas utilities."

Whillock also has solicited contributions from his friends and business associates. And he and his wife, Margaret, make personal gifts to Winrock annually.

Why is Whillock willing to invest so much of his personal resources—time, energy, funds—to helping Winrock survive and grow?

"I believe in what Winrock's doing," he says. "In other parts of the world, a lot of Winrock's work is keyed to agriculture, the environment, and farm production. But they're also trying to help rural people develop their skills and talents.

"In Arkansas, also," he continues, "Winrock is helping people in rural areas improve their lives. It is helping improve the economies of rural areas, and helping people get together to do things that they cannot do alone.

"It takes a number of things to make an organization like Winrock successful. One of those things is local support. Winrock's Arkansas program is doing very well, building momentum that will improve the lives of many in our state."

Balancing the economy and the environment

Economic development can have a downside. Environmental problems, for example, can be worsened when a country pushes economic development before it clearly understands the causes of those problems and develops an effective plan for solving them.

Vietnam is trying to avoid this downside, and Winrock's Upland Management Program, funded by the Ford Foundation, is supporting the country's efforts.

"Two-thirds of Vietnam is hills and mountains," says Neil Jamieson, the project's program officer based in Hanoi. "Those uplands used to be covered by forests, but no more—13 million hectares have been denuded. That's a third of the country. And the quality of the remaining forests has been degraded as well. So we're asking: What's causing the damage? How can Vietnam improve the lives of its people without further depleting its natural resources? Who is working on these problems within the country? What international organizations are willing to cooperate in this work?"

The project's host institution is the Center for Natural Resources and Environment Studies at the University of Hanoi. While the project is focused on assessment at this stage, it is "trying to help a bit, too," according to Jamieson.

"There's a young school teacher at Dien Bien Phu who is very concerned about this loss of resources," Jamieson says. "She wants to find some way to introduce environmental issues into the classroom.

"She told me, 'If we can get kids thinking about this and talking about it when they're in school, then when they get older and have power, they'll be sensitive to these issues.'

"But no materials are available, so we've been giving her some help. The project gave her a little money to start working on her idea, and it paid for some scientists to go out from Hanoi and look at the environmental situation with her.

"Ideally, environmental education combines international scientific expertise with local information. This teacher is right in line with that idea. Her course will inform kids about the general issues and also show them what's happening right in their district."

Other project activities include

- fostering opportunities for Vietnamese officials to share ideas and information with representatives of other countries that have coped successfully with similar problems
- conducting workshops to explore possible models for appropriately developing the uplands

"This generation has been using more than its share of trees, plants, and animals and water," Jamieson says. "If things continue the way they have gone for the past 20, 30, or 40 years, their grandchildren will be condemned to hunger and poverty."

Building peace through problem solving

When people work together to solve a common problem, they gain a better understanding of each other. Sometimes, they even become friends.

This principle is the basis for the U.S. Agency for International Development's Middle East Regional Cooperation Project (MERC), which began 12 years ago when the U.S. Congress set aside some foreign assistance money to promote peace in the Middle East by funding cooperative relationships between Israeli scientists and their Arab counterparts.

"There were skeptics," says Dick Cobb, Winrock's vice president for programs and global projects. "Everybody thought that politics was going to interfere, but that isn't the way it turned out. It has continued for so long because it broke through the political and cultural barriers and led to many long-standing relationships among the scientists."



From his desk at the Kazakh State Academy of Management located in Almaty, Kazakhstan, the regional director for Central Asia of Winrock's Farmer-to-Farmer Program, Steve W. Reiquam, sends this letter home:

"The words *Central Asia* evoke a geographic area of diverse and uncertain dimensions, located at a crossroads between Europe and Asia. Today, five independent countries exist in this area of the former Soviet Union: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. All Central Asian countries are multinational. Ethnic relations are uneasy.

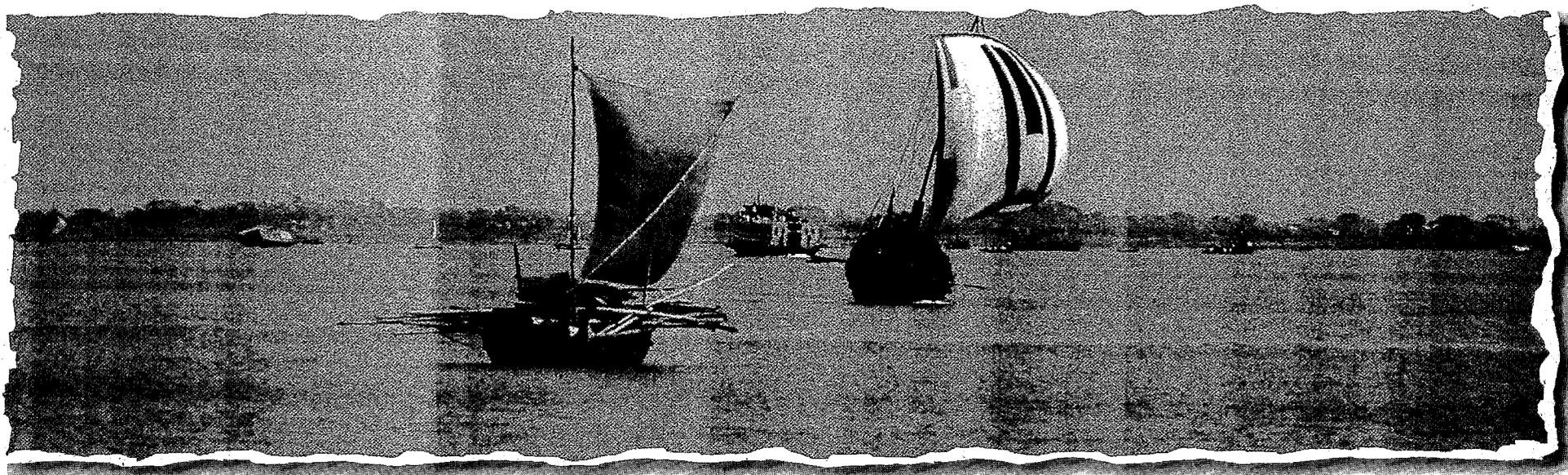
"Extreme centralization, rigidity, mass collectivization of agriculture, imposed institutions, and isolation from the outside world was communism's 70-year legacy. Each of the countries of former Soviet Central Asia has embarked on reform; the tempo and strategy varies from country to country.

"The former Soviet agricultural economy is not undeveloped. It is rather out of sync structurally with international market forces and, therefore, cannot respond to them.

"Private ownership of land does not exist here. For the most part, the indigenous Central Asian peoples were nomads and therefore did not own land. Private property rights were anathema to the Soviet Union. Farming families are now given shares of land that may be exchanged, inherited, lent, or mortgaged although, technically, ownership remains with the state. That is what is generally meant by privatization of agriculture.

"The Farmer-to-Farmer Program allows the agricultural reform process with short-term technical assistance and training, working with privatized farmers and market-oriented cooperatives, to help them solve their own problems. The program's management is committed to assisting and encouraging agricultural reformers."

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Winrock manages the MERC Project for USAID, and Floyd Williams, the project's coordinator at Winrock, says USAID decided to make some changes in the project after 10 years of success.

"They saw that the program worked," Williams says. "It built peaceful relationships. But it had two shortcomings: some of the work wasn't very scientific, and some of it didn't have much impact on development."

Winrock International received a contract from USAID to "bring both science and development insight to the project," Williams says.

About a dozen MERC projects are currently operating. Each is led by a U.S. institution—usually a university—that coordinates research and other activities in Israel and at least one Arab country.

A project led by Virginia Polytechnic Institute and State University (VPI), is a good example. VPI is helping implement a comprehensive research project on broomrape, a parasitic weed that attacks the roots of broadleaf crops.

"Broomrape is a devastating weed, particularly around the Mediterranean—the Middle East, northern Africa, southern Europe," says Chester L. Foy, professor in VPI's Department of Plant Pathology, Physiology, and Weed Science, and principal investigator for the U.S. component. "In Israel, I've seen carrot fields completely engulfed by it. I've seen tomato fields, potato fields, and sunflower fields badly infested. I've seen it attack broadbeans in Egypt. Further agricultural development of these countries will depend in part on what sort of solutions we can come up with."

The project has joined together scientists from the United States, Israel, and Egypt to identify agronomic practices that can help reduce crop damage from broomrape; investigate the anatomy, physiology, and biochemistry of the interaction between the host and the parasite; and develop crops that are resistant to broomrape infestation.

"VPI recognized a problem, submitted a proposal to USAID, and received US\$ 3 million

dollars for four years," Foy says. "We subcontracted with two agencies in the collaborating countries: the National Research Center in Egypt and the Weizmann Institute of Science in Israel. They, in turn, have contracted with organizations within their countries to manage the project's various activities. There are somewhere between 10 and 15 subactivities if you count all three countries."

Unlike some other lead institutions for MERC projects, VPI is an active participant in the research it is administering.

"I'm a scientist," Foy says. "I'm interested in this project from a research standpoint. But knowing that it has political, social, and economic advantages—as well as being good, sound science—makes it all the more valuable."

"Development is helping people get so they can anticipate, recognize, and solve problems as they develop," Williams says. "This project is effective in getting people to work together to accomplish common purposes."



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Funding Sources

AAES	Arkansas Agricultural Experiment Station
ACES	Arkansas Cooperative Extension Service
AEC	Arkansas Electric Cooperatives
AIDAB	Australian International Development Assistance Bureau
AIDC	Arkansas Industrial Development Commission
AP&L	Arkansas Power and Light
AR Wood	Arkansas Wood Manufacturers Association
ASTA	Arkansas Science and Technology Authority
Banbury	Banbury Fund
CIDA	Canadian International Development Agency
Center	Center for PVO/University Collaboration in Development
CGP	Center for Global Partnership
Chase	The Chase Manhattan Bank, N.A.
DOE	U.S. Department of Energy
Ernst & Young	Ernst & Young
Entergy	Entergy Corporation
FICAH	Food Industry Crusade Against Hunger
Ford	Ford Foundation
FS	Forest Service
GTZ	German Agency for Technical Cooperation
Harpole	Patricia Harpole, Private Donor
IDRC	International Development Research Centre
IF	International Foundation
IITA	International Institute of Tropical Agriculture
Inglewood	Inglewood Foundation

1993 Projects

Project/purpose	Funding source	Budget (US\$ 000)	Duration
GLOBAL			
Agriculture Indefinite Quantity Contract <i>(ATI Evaluation, CASP, Afghanistan, Barbados, Indonesia, Jamaica, and Morocco)</i> Provided short-term technical and advisory services in agricultural economics and sector planning, animal and crop production and protection, institutional development, fisheries and aquaculture, soil and water management, agribusiness, and appropriate technology.	USAID	1,600	1990 - 1993
Agriculture and Food Systems Indefinite Quantity Contract Providing short-term technical and advisory services in agriculture and food systems project design and evaluation. Primary contractor: ISTI.	USAID		1993 - 1998
Biosphere 2 Assessing and making recommendations to the Biosphere 2 program on feed resources and processing, animal species utilization, animal management, and crop and animal interactions.	SBV	12	1993 - 1995
Biomass Energy Systems and Technology <i>(Belize, Brazil, Costa Rica, Dominican Republic, Guatemala, Honduras, India, Indonesia, Jamaica, Pakistan, Philippines, Thailand)</i> Promoting environmentally sound production of energy based on renewable fuels from agriculture and forestry, encouraging commerce in products associated with renewable energy systems, and facilitating the participation of private businesses in renewable-energy activities.	USAID	11,416	1989 - 1994
Economic Analysis of Small Ruminant Production and Marketing Systems <i>Title XII (Indonesia and Bolivia)</i> Evaluating the economic feasibility of efforts to improve the productivity of small ruminants and thereby raising farmers' incomes, and improving the host country's ability to conduct similar economic analyses. Primary contractor: Small Ruminant-Collaborative Research Support Program administered by the University of California, Davis.	USAID Winrock	4,500	1979 - 1995
Export Council for Renewable Energy—Renewable Energy and the Environment Program (ECRE-REEP) A subcontract from the U.S. Export Council for Renewable Energy to support the establishment of Renewable Energy Project Support Offices (REPSOs) and the REPSO network.	USAID	463	1993
Environmental Training Project (ASSET) Providing training for USAID personnel to increase their awareness and understanding of environmental issues as they relate to the development process. Primary contractor: Institute for International Research.	USAID	426	1990 - 1995
Environmental and Natural Resources Policy and Training Program (EPAT) Furthering adoption of policies in USAID-assisted countries that promote sustainable use of natural resources and enhance environmental quality. Winrock leads an alliance of 20 members.	USAID	6,236	1991 - 1996
Farmer-to-Farmer Global Program Arranging for volunteer farmers and agricultural experts to provide technical assistance in agricultural production and food processing, marketing, and distribution to farmers in nine Central American, Western African, and Eastern European countries.	USAID	2,200	1991 - 1995

Project/purpose	Funding source	Budget (US\$ 000)	Duration
Farmer-to-Farmer NIS Program Arranging for volunteer farmers and agricultural experts to provide technical assistance in agricultural production and food processing, marketing, and distribution to farmers in seven countries of the New Independent States of the former Soviet Union.	USAID	6,400	1992 - 1995
Krgyz Republic Wool Processing Training Provided short-term training in the United States to a group from the Krgyz Republic by a study tour of production, processing, and marketing locations.	USAID	40	1993
Renewable Energy Applications and Training (REAT) Encouraged investments in sustainable and replicable renewable energy projects in developing countries by developing strategic policies, providing preinvestment and financial support for project development, supporting the commercialization of technology, disseminating information, arranging training, providing reverse trade missions, and assessing environmental impacts and encouraging the mitigation of environmental damage. Primary contractor: U.S. Export Council for Renewable Energy.	USAID	913	1991 - 1993
Romania Rural Human Resource Development Assessed the viability of organizing a rural training program to increase the capability of people to produce and process food and agricultural products.	Harpole	10	1993
Strengthen Environmental Component of Nongovernmental Organizations Small grants program strengthened the capabilities of nongovernmental organizations to undertake environmental programs.	RF	100	1993
Supporting Agriculture Restructuring in Albania (SARA) Providing technical services that support agriculture restructuring in Albania to promote food security as part of a broad-based, market-oriented economic growth program.	USAID	13,969	1993 - 1998
Task Force on Livestock Research and Development Reviewing key documents to determine the history of support for and current perspectives of development agencies toward the importance of livestock in rural development and to determine the environmental impact in developing countries. Includes a global telecomputer conference of 35 participants in 15 countries, providing a forum for discussion and exchange among different viewpoints. A collaborative effort of Winrock, IDRC, and INFORUM.	IDRC	36	1992 - 1994
Water Resource and Irrigation Policy Program Promoting sustainable agriculture in developing countries by assisting in preparing and implementing water-resource and irrigation policies that protect resources, resolve conflicts, increase water productivity, and sustain the benefits of water-resource investments.	Ford Winrock	400	1990 - 1995
Winrock Development-oriented Literature Publishing agricultural books on commodities and selected topics for use by planners and agricultural leaders in developing countries and assistance agencies.	Winrock		1979 - continuing

Funding Sources (continued)

Kellogg	Kellogg Foundation
ODA	Overseas Development Administration
PAAC	President's Arkansas Advisory Council
PACT	Private Agencies Collaborating Together
Pew	Pew Charitable Trusts
RBF	Rockefeller Brothers Fund
RF	Rockefeller Foundation
RC&D	Resource Conservation and Development Council (U.S. Department of Agriculture, Soil Conservation Service)
RDA	Rural Development Administration
SAA	Sasakawa Africa Association
SARE	Sustainable Agriculture Research and Education Program
SBV	Space Biospheres Venture
SERBEP	Southeast Region Biomass Energy Program
Starr	Starr Foundation
SWB	Southwestern Bell
Treasury	U.S. Department of Treasury
UNDP	United Nations Development Programme
USAID	U.S. Agency for International Development
USDA	U.S. Department of Agriculture
World Bank	International Bank for Reconstruction and Development
Winrock	Winrock International Institute for Agricultural Development
WVI	World Vision International

NOTE: These organizations provided funds for projects operating in 1993 though, in some instances, this support was received in previous years.



1993 Projects (continued)

Project/purpose	Funding source	Budget (US\$ 000)	Duration
AFRICA AND THE MIDDLE EAST			
<i>Regional</i>			
African Rural Social Sciences Research Network (ARSSRN) Supporting rural social science policy research in Africa through small research grants and publication and dissemination of results.	Ford USAID	658	1990 - 1995
African Women Leaders in Agriculture and the Environment Program (AWLAE) Developing and managing a long-term program to prepare a generation of African women for leadership in agriculture-related sciences—to enhance food security and environmental conservation—through academic fellowships, leadership and short-term training, access to positions and professional advancement, and country and regional strategies and activities.	Banbury Ford IITA RBF UNDP USAID Winrock	3,408	1988 - continuing
Middle East Regional Cooperation Program (MERC) Providing technical and managerial assistance to USAID to refine proposal guidelines, evaluate proposals, conduct annual management reviews, arrange for evaluation reviews of MERC project activities, and facilitate workshop and communication networks among researchers and institutions in the Middle East.	USAID	1,000	1992 - 1997
On-Farm Productivity Enhancement Project (OFPEP) Strengthening community-level productivity of farming in Senegal, The Gambia, Kenya, and Uganda through private voluntary organizations, U.S. Peace Corps, and host-country institutions.	Center FICAH USAID Winrock	3,200	1992 - 1997
Sasakawa African Fund for Extension/Education Project (SAFE) Strengthening graduate degree programs in extension education at three African universities (Cape Coast and Legon in Ghana, and Sokoine in Tanzania) and providing degree-training opportunities for extension workers from Benin, Ghana, and Tanzania.	SAA	2,935	1991 - 1996
<i>Burkina Faso</i>			
Agricultural Research and Training Support Increasing sustainable agricultural production, productivity, and income in the primary agricultural areas of the country through development of farming systems research with effective links to key policy-makers and related nongovernmental agencies. Primary contractor: Purdue University.	USAID	2,100	1990 - 1994
<i>Burundi</i>			
Small Farming Systems Research Generated improved technologies for small farmers, upgraded professional skills of research and extension staffs, strengthened linkages between agricultural research and the farming community, and procured research equipment. Primary contractor: University of Arkansas.	USAID	1,128	1986 - 1993

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Project/purpose	Funding source	Budget (US\$ 000)	Duration
Cameroon			
National Cereals Research and Extension Training Assisting the Institut de la Recherche Agronomique to increase agricultural production by strengthening institutional capacity to conduct research and develop extension linkages. Primary contractor: IITA.	USAID	2,708	1991 - 1994
Côte d'Ivoire			
Technical Assistance Strengthened the training and research capacity of the Centre Ivoirien de Recherches Economiques et Sociales, University of Abidjan, to become a regional center of excellence in agricultural economics.	CIDA IDRC	160	1991 - 1993
Egypt			
National Agricultural Research Strengthened the Egyptian Agricultural Research Center's ability to provide improved technology that can lead to increased food production and greater income for farmers. Primary contractor: Consortium for International Development.	USAID	1,004	1987 - 1993
Livestock Development Assessing the feed/livestock/meat subsectors in Egypt to identify constraints and recommend policy and institutional reforms to promote more efficient production, processing, and marketing of animal products.	USAID	160	1993 - 1994
Ghana			
TIP/Export Enhancement Addressing the constraints that limit private-sector investments and production for exports by providing technical assistance to strengthen the major public and private sector institutions involved in investment and export promotion. Primary contractor: AMEX.	USAID	213	1993 - 1998
Kenya			
Resource Information Management Assisted institutions to develop methodologies and strategies in Eastern Africa for monitoring bamboo-dominated ecosystems and the domestication of bamboo in ways that link management and domestication with sustainable development of the bamboo subsector.	USDA	64	1993
Dual-purpose Goat Production Systems for Smallholder Agriculturalists (<i>Title XII</i>) Developed and adapted dual-purpose goat-production systems for use by family farmers and designed and tested year-round feeding systems. Primary contractor: Small Ruminant-Collaborative Research Support Program administered by the University of California, Davis.	USAID Winrock	3,795	1979 - 1993
Support to Kenyan Agricultural Research Improvement Project (KARI) Providing farming systems agronomists to the Kenyan Agricultural Research Improvement Project under subcontract to MidAmerica International Agricultural Consortium.	USAID	216	1993 - 1995

The Rockefeller family has been involved with Winrock and its predecessor organizations for more than 40 years. John was the first, starting in 1953 with his agricultural development work in Asia. Winthrop authorized the executors of his estate in the late 1960s to establish an organization which would focus on the complex problems facing small farmers. Laurance and David have been strong supporters of Winrock International as well, firmly believing in the mission of assisting people in the effort to improve their lives. Together they issued this statement: "We are very proud of the fact that Winrock International and the Rockefeller brothers have been philanthropic partners in this critical and essential endeavor. Winrock helps educate people in the management of their own destinies, to protect the environment, and to provide for a secure future."

“Winrock is not a static

organization. The problems

we face change day to day.

You have to look at all of the

problems and work to solve

them sequentially.”

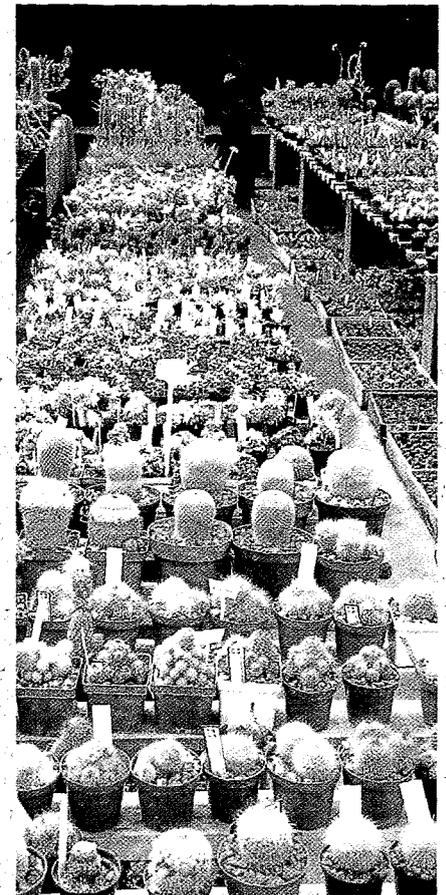
HUGH MURPHY, senior vice
president, finance, administration
and development

2
1993 Projects (continued)

Project/purpose	Funding source	Budget (US\$ 000)	Duration
Lesotho Community Natural Resource Management Improving management of natural resources in rural rangeland areas through the development of local institutions such as grazing associations to manage, protect, and utilize fragile lands. Primary contractor: Associates in Rural Development, Inc.	USAID	888	1992 - 1997
Malawi Building Responsive Institutions for Development of Grassroots Extension (BRIDGE) Increasing the capacity of a local nongovernmental organization, the Christian Service Committee, to be an effective grassroots extension and field-grant-service organization for small farmers. Primary contractor: The World Learning, Inc.	USAID	1,200	1992 - 1995
Turkey Training Services Managing degree and nondegree training of 140 scientists to strengthen the scientific and managerial expertise of the Ministry of Agriculture and Rural Affairs and the Ministry of Forestry.	World Bank	1,000	1993 - 1997
ASIA			
Regional Asian Fellowship Program Sponsoring master's-level graduate-degree training in the rural social sciences at universities in Thailand, Malaysia, the Philippines, and Australia for students from South and Southeast Asia.	AIDAB Winrock	1,186	1978 - continuing
Initiative for Development of Environmental Alliances through Leadership (IDEAL) Developing and stimulating intellectual and institutional ability of American, Japanese, and other Asian scholars to address environmental problems and to initiate exchange and education.	CGP RBF	249	1993 - 1995
Forestry/Fuelwood Research and Development Aiding small farmers in Asia in meeting their fuelwood and other tree-product needs by establishing the Multipurpose Tree Species Research Network for biological and social scientists to focus on improving the production and use of these trees. Twelve countries of South and Southeast Asia are cooperating in multilocation field trials, comparative regional studies, cooperative research, training, and research grants.	USAID	21,449	1985 - 1994
Bangladesh Agriculture and Technology Development, Design Phase Recommending a plan of action to facilitate open market agribusiness development through policy reform, technology development and transfer, institutional development, and training. Primary contractor: International Fertilizer Development Center.	USAID	110	1992 - 1997
Agroforestry and Participatory Forestry Strengthening the capacity of the Bangladesh government and the staffs of nongovernmental organizations to develop agroforestry and participatory-forestry programs.	Ford PACT	651	1990 - 1995

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Project/purpose	Funding source	Budget (US\$ 000)	Duration
Professional Development in Social Sciences Supported the professional development of rural social scientists by sponsoring in-country workshops and seminars, and providing research awards, fellowships for graduate study, and grants for publishing instructional materials.	Ford	435	1984 - 1993
Strengthening Capacity in Policy Analysis in Agriculture and Resource Management Provided advanced-training fellowships in agricultural development and natural-resource-management policy, and supported a national fellows network, research grants, seminars, and publications.	ODA USAID	2,352	1988 - 1993
China			
Agricultural Economics Research and Training Strengthened research and training in agricultural economics and policy-making by providing graduate-degree fellowships, workshops, short courses, and joint research and publication programs.	Ford	489	1988 - 1993
China-Taiwan Exchanges Strengthening relationships among agricultural economists of the People's Republic of China and the Republic of China by supporting meetings, workshops, and research projects.	Starr	104	1990 - continuing
Sustainable Agriculture Providing small research grants for Chinese scientists to study sustainable agricultural systems.	RBF	330	1987 - 1994
Yunan Uplands Management Training Supporting degree and nondegree training in management of natural resources in the uplands and assisting fellows in developing research agendas.	Ford	888	1991 - 1995
India			
Indo-American Foundation Conducted the first phase of a feasibility study to make recommendations concerning mission, strategic goals, structure, function, and financial plans for establishing an Indo-American partnership in agricultural research and development.	USAID	119	1992 - 1993
Natural Resource Economics Research and Capacity Building Conducting economic research on the productivity and sustainability of soil and waste resources relating to India's semiarid tropics, and assisting agricultural universities in conducting research and providing graduate education on the economics of soil and water resources in semiarid tropical agriculture.	Ford RF	1,213	1989 - 1995
Plant Genetics Resource Project Helping to preserve plant biodiversity in India; providing technical assistance for systematic collection, conservation, and testing of plant germplasm; and providing managerial assistance and procurement services.	USAID	6,800	1991 - 1996
Indonesia			
Agricultural Research Management Strengthening the national agricultural research system by improving the management skills of its personnel in planning, programming, monitoring, evaluating, and providing information and financial and economic analyses.	World Bank	4,270	1990 - 1995



Winrock helps preserve biodiversity in India with private industry and the National Bureau of Plant Genetic Resources. This greenhouse represents one of four diverse ecological zones.



1993 Projects (continued)

Project/purpose	Funding source	Budget (US\$ 000)	Duration
<i>Economic Analysis of Small Ruminant Production and Marketing Systems (Title XII) (see "Global")</i>			
Java Social Forestry—Phase II Provided technical assistance to the Forestry Research Center's agroforestry research unit to strengthen its capabilities through training and through institutionalizing agroforestry and social forestry concepts.	Ford	50	1991 - 1993
Windpower for Islands and Nongovernmental Development (WIND) Providing assistance to nongovernmental organizations and local communities to increase their institutional, managerial, technical, and human resource capacity to demonstrate, manage, and transfer renewable wind energy technologies to replace carbon-based fuels that contribute to global warming.	USAID	2,800	1993 - 1996
<i>Nepal</i>			
Clonal Propagation of Pine Trees Built a tree-tissue-culture laboratory for rapid clonal propagation of superior forest trees to help alleviate massive deforestation.	USAID	122	1987 - 1993
Policy Analysis in Agriculture and Related Resource Management Strengthened policy analysis capabilities in Nepal's Ministry of Agriculture and related institutions by sponsoring graduate-degree fellowships at Asian universities, providing grants for research and seminars, sponsoring nondegree training, and conducting research.	Ford GTZ USAID	2,750	1987 - 1993
Rapti Rural Development Built local capacity to increase agricultural and forestry productivity in the Rapti zone of western Nepal. Primary contractor: Devres, Inc.	USAID	1,319	1988 - 1993
<i>Pakistan</i>			
ARP II Balochistan Providing technical assistance to strengthen the resource planning, resource allocation, monitoring, and evaluation capabilities of the Balochistan Agricultural Research Board. Training component to manage long- and short-term degree and nondegree training related to the project.	World Bank	3,300	1993 - 1998
Forestry Design Provided consultants to the World Bank South Asia country department for forestry sector design study.	World Bank	81	1993
Forestry Planning and Development Assisting the Pakistani government and nongovernmental organizations in planning effective development of forest resources on public and private lands and in designing development projects and research to increase production of trees for fuelwood and industrial use on private farmlands, thus reversing the trend toward denuded landscape.	USAID	8,314	1985 - 1994
Management of Agricultural Research and Technology Strengthened the performance of the national agricultural research system in generating high-quality, relevant technologies and disseminating them to Pakistan's farmers.	USAID	8,124	1986 - 1993

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Project/purpose	Funding source	Budget (US\$ 000)	Duration
SARHAD Assisted the SARHAD Rural Support Corporation in the North West Frontier Province of Pakistan in its effort to strengthen programs, administration, and delivery of service to rural people of the area.	USAID Winrock	2,000	1991 - 1993
Philippines			
Natural Resource Management Project Monitoring and evaluating the project based on principles of policy recommendations for reform, with special emphasis on women's roles.	USAID	2,500	1991 - 1996
Upland Development Program Provided a senior technical advisor to direct agroforestry training courses and an agroforestry diploma course at the University of the Philippines at Los Baños.	Ford	265	1988 - 1994
Thailand			
Resource Management Network Organized research networks and provided training, fellowships, and research grants for natural-resource-management specialists.	Ford Winrock	860	1986 - 1993
Sugarcane Field Trash Baling Trials Continued research on the technical and economic practicality of using sugarcane field residues as an energy source for private sugar factories.	USAID	87	1990 - 1993
Vietnam			
Activities Leading to Uplands Management Provided support for a three-person team to assess and recommend a program in upland development and social forestry for the Ford Foundation and other organizations in Vietnam and elsewhere.	Ford	87	1991 - 1994
Economics Education and Research Providing training in economics at Asian universities, supporting efforts to shift orientation to a market economy, and developing an initiative in upland forest management.	Ford	238	1991 - 1994
Postgraduate Training of Vietnamese Academics Providing funding and logistical support for graduate-level training for Vietnamese academics in subjects related to the environment at Asian and Australian universities.	AIDAB	2,741	1991 - 1996
Upland Management Program Providing training in economics at Asian universities, supporting efforts to shift orientation to a market economy, and developing an initiative in upland forest management.	Ford	463	1991 - 1995
LATIN AMERICA AND THE CARIBBEAN			
Belize			
Natural Resource Management Defining a strategy and implementing an environmental protection and optimal natural resources management program to include environmental planning and monitoring, forestry protection and management, and sustainable agricultural development. Primary contractor: World Wildlife Fund.	USAID	1,600	1992 - 1995

"A big part of our job

is to create dialogues

and promote forums that

get dialogue going. We

aren't imposing blueprints;

it's a learning process."

DAVID MATTOCKS, program
officer, Center for Institutional and
Human Resource Development

“I think a lot of Arkansas

farmers are going to see

and appreciate Winrock in

the future.”

JACK SISEMORE of Mulberry,
member of the advisory board
for Winrock's poultry litter marketing
hotline

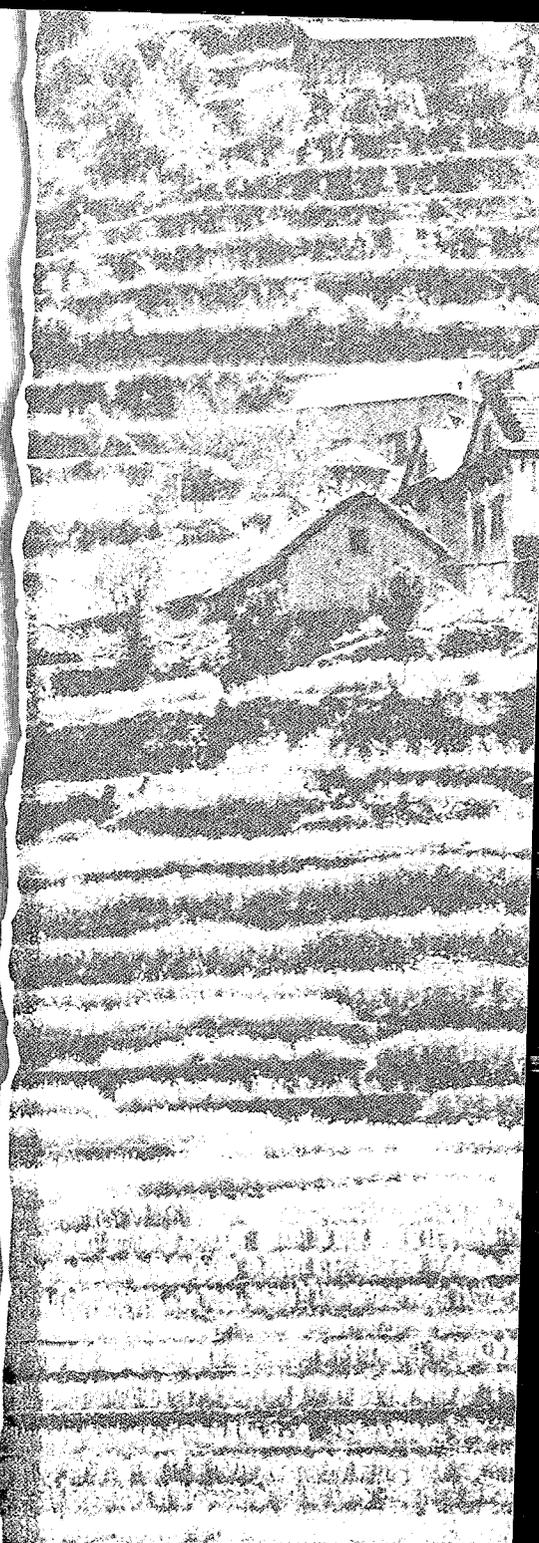


1993 Projects (continued)

Project/purpose	Funding source	Budget (US\$ 000)	Duration
Bolivia			
Economic Analysis of Small Ruminant Production and Marketing Systems (<i>Title XII</i>) (<i>see "Global"</i>)			
Dominican Republic			
Research and Training in Natural Resource Management/Environment Providing small grants and training opportunities in natural resource management and environmental enhancement, and developing an initiative in upland forest management.	Ford	600	1992 - 1996
Guatemala			
Vegetable Production Training for Agriculturalists Participated in conducting a 9-month program for Guatemalan agriculturalists that included technical, social, cultural, and hands-on training in Arkansas. Primary contractor: University of Central Arkansas.	USAID	96	1992 - 1993
Highlands Agricultural Development Project, Phase II Provided technical assistance in research and extension to improve the production and marketing of nontraditional crops. Primary contractor: Louis Berger International, Inc.	USAID	1,065	1990 - 1993
Mexico			
Goat and Rural Development Project Providing technical assistance to the Mexican Foundation for Agricultural Development in San Luis Potosí to improve rural development through goat breeding, nutrition, and management.	Chase IF	74	1990 - 1994
UNITED STATES			
Alaska Timber Studies Estimated the economic value of timber and other resources in an area of Long Island, off the coast of southeastern Alaska.	Treasury	176	1992 - 1993
Arkansas Biomass Energy and Utilization Promoting utilization of biomass for energy and energy-saving products in Arkansas through resource assessments, demonstration projects, policy analysis, and information transfer.	AIDC DOE	700	1991 - 1995
Arkansas Rural Enterprise Center Helped small businesses compete more effectively in the marketplace by making technological and marketing innovations and technical assistance more available to them.	AEC AP&L Entergy Ernst & Young PAAC SWB	150	1991 - 1993

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Project/purpose	Funding source	Budget (US\$ 000)	Duration
Arkansas Wood Manufacturers Association (AWMA) Winrock's Arkansas Rural Enterprise Center provides staff support to AWMA and assists with its organizational activities.	AR Wood	30	1993 - 1994
Biogas Recovery from Swine Wastes Demonstrated and evaluated the technical and economic feasibility of collecting biogas generated in an anaerobic lagoon digester at a typical-sized swine production facility in Arkansas.	SERBEP	60	1992 - 1993
Integrated Technological and Marketing Strategies to Make Broiler Production More Sustainable Encouraging movement of poultry litter from western Arkansas, to southern cropland areas, where it can be used as a valuable soil amendment, investing in feasibility studies, and providing grants for marketing business.	AAES ACES SARE USDA	200	1992 - 1995
Millwood Water Quality Identified and implemented environmentally sound and economically feasible steps for reducing potential water-quality problems associated with animal waste.	Pew	110	1991 - 1993
National Fellowship for Winrock Staff Member, Roger Steele Increased his skills and insight into areas outside his discipline to enhance his capacity to deal with society's complex problems and provide leadership in finding solutions.	Kellogg Winrock	66	1990 - 1993
Pellet Stove Demonstration Project Introduced the use of wood pellet fuel to the general public, and stimulated both demand and manufacture of the fuel using wood processing residues through a working demonstration unit in each of the 21 counties in Northern Arkansas.	RC&D SERBEP	75	1992 - 1993
Revolving Loan Fund Providing technical assistance and establishing a revolving loan fund to expand jobs and incomes derived from secondary wood product manufacturers in Arkansas.	RDA	66	1993 - 1994
Small Grants for Sustainable Agriculture Initiated a small-grants program to encourage farmers, business people, and educators to evaluate new farming methods and markets to increase farm profits while protecting the environment of the Mississippi River Delta.	Inglewood	60	1990 - 1993
Selected Wood Product/Manufacturers Management Conducting a feasibility study and developing markets for Arkansas wood products to help the economies of timber-dependent counties in Arkansas.	FS USDA	28	1993 - 1994
State Biomass Resource Assessment Characterized the biomass resource base in Arkansas, including type, location, and quantity, by assimilating various sources of existing information into a graphics-based document for use by public and private organizations involved in biomass utilization policies and activities.	ASTA SERBEP	5	1992 - 1993





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“Winrock is only one

actor. We have to have other

stakeholders and friends

who will work with us.”

ELISE FIBER SMITH,
project director, African Women
Leaders in Agriculture and the
Environment Program



1993 Selected Publications and Papers (continued)

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Livestock

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Natural Resources and Environment

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Rogers, P. Population and environmental deterioration: A 20-year retrospective. Discussion Paper no. 15. Center for Economic Policy Studies, Winrock International, Arlington, VA, USA.

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Rural Social Sciences

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Women in Development

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The selected publications listed here have been written by Winrock staff during 1993 or published by Winrock International.

For information about purchasing copies or photocopies of any publication listed here, write to Librarian, Winrock International, Rt. 3, Box 376, Morrilton, Arkansas 72110, USA.

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1993 Fellows

Winrock International's management of fellowship programs is designed to help host-country institutions and the donor agencies to secure the best possible academic training for their participants. During 1993, Winrock managed the programs of 162 persons from 18 countries who were seeking graduate studies, pursuing postdoctoral studies, or filling visiting faculty appointments or nondegree training in their careers. These fellowships are funded by grants and contracts administered by Winrock and from the institute's own resources. The recipients are listed by their home country, institution attended, degree objective, and field of study.

Name	Home Country	University	Country	Degree	Discipline
Abdullah, Buang	Indonesia	University of Missouri-Columbia	USA	M.S.	Plant biotechnology
Acharya, Keshav P.	Nepal	University of the Philippines at Diliman	Philippines	Ph.D.	Economics
Adhikary, Milan	Nepal	Chiang Mai University	Thailand	M.S.	Agricultural systems
Adil, Widiati Hadi	Indonesia	University of Wisconsin	USA	M.S.	Horticulture
Agus, Fahmuddin	Indonesia	North Carolina State University	USA	Ph.D.	Soil science
Ahmed, Sultan U.	Bangladesh	Syracuse University	USA	Ph.D.	Economics
Akhmatov, Tastanbek	Kryghyz Republic	Study Tour	USA	Nondegree	Wool processing
Alamgir, Anwar Fazal	Bangladesh	Study Tour	USA	Nondegree	Research station tour
Asege, Janet	Uganda	Cornell University	USA	M.P.S.	Agricultural extension
Ateh, Comfort	Cameroon	University of Wisconsin-Madison	USA	M.S.	Agronomy
Badawing, Husein	Indonesia	Oregon State University	USA	Ph.D.	Fisheries resource economics
Bade-Shrestha, Kabita	Nepal	University of the Philippines at Diliman	Philippines	M.S.	Statistics
Bajracharya, Bijaya	Nepal	Chiang Mai University	Thailand	M.S.	Agricultural systems
Bara, Niva	India	University of the Philippines at Los Baños	Philippines	Ph.D.	Education extension
Begum, Khodeza	Bangladesh	Study Tour	USA	Nondegree	Research station tour
Bekbava, Tagtuzkau	Kryghyz Republic	Study Tour	USA	Nondegree	Wool processing
Bhattarai, Madhusudan	Nepal	University of the Philippines at Los Baños	Philippines	M.S.	Agricultural economics
Bikaningsih	Indonesia	University of the Philippines at Los Baños	Philippines	M.S.	Development management
Birang, Madong	Cameroon	University of Arkansas, Fayetteville	USA	M.S.	Rice agronomy
Boer, Mursal	Indonesia	University of New South Wales	Australia	Ph.D.	Ecology in livestock production
Boumtje, Pierre	Cameroon	University of Illinois-Urbana	USA	M.S.	Agricultural economics
Bui Ngoc Son	Vietnam	Australian National University	Australia	M.S.	Development administration
Cai Kui	P.R. China	Chiang Mai University	Thailand	M.S.	Agricultural systems program
Chau Chau Hoang	Vietnam	University of Melbourne	Australia	M.S.	Agricultural science
Che Tuong Nhu	Vietnam	Australian National University	Australia	M.S.	Economics of development
Chen Fang	P.R. China	University of the Philippines at Los Baños	Philippines	M.S.	Social forestry
Dao Anh Tuan	Vietnam	Australian National University	Australia	M.S.	Development economics
Deb, Uttam Kumar	Bangladesh	University of the Philippines at Los Baños	Philippines	Ph.D.	Agricultural economics
Dibyantoro, Anna	Indonesia	University of Newcastle Upon the Tyne	UK	Ph.D.	Pesticide technology
Dimithe, Georges	Cameroon	Michigan State University	USA	Ph.D.	Agricultural economics
Effendie, Kusumah	Indonesia	University of the Philippines at Los Baños	Philippines	Ph.D.	Development management
Eta-Ndu, Jacob Tiku	Cameroon	University of Minnesota	USA	Ph.D.	Agronomy
Fabien, Jeutong	Cameroon	University of Nebraska-Lincoln	USA	Ph.D.	Sorghum breeding
Fatmi, Mohammad	Bangladesh	University of the Philippines at Diliman	Philippines	Ph.D.	Economics
Najmul Ehsan					
Fen Yan	P.R. China	University of the Philippines at Los Baños	Philippines	Nondegree	Natural resource management/environment
Frempong-Asante, Benedicta	Ghana	Wageningen Agricultural University	Netherlands	Ph.D.	Agricultural extension

Name	Home Country	University	Country	Degree	Discipline
Gadrinab, Lillian	Philippines	Michigan State University	USA	Ph.D.	Forest genetics
Gaffer, Abdul Karim	Indonesia	Asian Institute of Technology	Thailand	Ph.D.	Aquaculture
Gauchan, Devendra	Nepal	Chiang Mai University	Thailand	M.S.	Agricultural systems
Gautam Ramesh	Nepal	Universiti Pertanian Malaysia	Malaysia	M.S.	Agribusiness
Glenhouenou, Bernardin	Benin	Universite France-Rabelais	France	Ph.D.	Anthropologies dynamiques intercultural
Gothama, Anak Agung Agra	Indonesia	Mississippi State University	USA	M.S.	Entomology
Gultom, Donna	Indonesia	University of Göttingen	Germany	M.S.	Pasture management
Guo, Daosen	P.R. China	Kasetsart University	Thailand	Nondegree	Community forestry
Gupta, Ashwani	India	University of Massachusetts	USA	Ph.D.	Resource economics
Gurung, Jit Bahadur	Nepal	University of the Philippines at Diliman	Philippines	Ph.D.	Sociology
Hardiyanto	Indonesia	University of the Philippines at Los Baños	Philippines	M.S.	Crop breeding
Hardono	Indonesia	University of the Philippines at Los Baños	Philippines	M.S.	Development communications
Haryono	Indonesia	Asian Institute of Technology	Thailand	Ph.D.	Computer science
Hidayat, Achmad	Indonesia	University of New South Wales	Australia	Ph.D.	Bioanalytical chemistry
Ho Ngoc Phuong	Vietnam	Australian National University	Australia	M.S.	Development economics
Hoang Van Thanh	Vietnam	University of the Philippines at Diliman	Philippines	M.S.	Development economics
Hossain, Belayet	Bangladesh	North Carolina State University	USA	Ph.D.	Agricultural economics
Hossain, Md. Anowar	Bangladesh	Study Tour	USA	Nondegree	Research station tour
Hossain, Syeda Zakia	Bangladesh	University of Queensland	Australia	Ph.D.	Sociology
Huang, Tanbo	P.R. China	University of the Philippines at Los Baños	Philippines	M.S.	Forestry
Huang, Yaqing	P.R. China	University of the Philippines at Los Baños	Philippines	Nondegree	Agribusiness
Indrasari, Siti	Indonesia	University of the Philippines at Los Baños	Philippines	M.S.	Food and nutrition planning
Islam, Fakhrul	Bangladesh	University of the Philippines at Los Baños	Philippines	Ph.D.	Agricultural economics
Islam, Mohammad Faisal	Bangladesh	Colorado State University	USA	Ph.D.	Resource economics
Islam, Nazrul	Bangladesh	Harvard University	USA	Ph.D.	Economics
Islam, Shahidul	Bangladesh	Oregon State University	USA	Ph.D.	Agricultural economics
Joshi, Ganesh	Nepal	University of the Philippines at Los Baños	Philippines	M.S.	Agricultural economics
Joshi, Neeraj Narayan	Nepal	Universiti Pertanian Malaysia	Malaysia	Ph.D.	Rural sociology
Kachkinbai, Kadyrkulov	Kryghyz Republic	Study Tour	USA	Nondegree	Wool processing
Kafle, Banik Raj	Nepal	Universiti Pertanian Malaysia	Malaysia	M.S.	Agricultural extension
Kafley, Govinda	Nepal	University of the Philippines at Los Baños	Philippines	M.S.	Forest resource management
Kan, Huan	P.R. China	University of the Philippines at Los Baños	Philippines	Nondegree	Community nutrition
Kante, Bore Assa	Mali	IAV Hassan II University	Morocco	Ph.D.	Food technology
Kartamihardja, Endi	Indonesia	Universiti Pertanian Malaysia	Malaysia	M.S.	Population dynamics and management
Katwal, Bhimendra	Nepal	University of the Philippines at Diliman	Philippines	Ph.D.	Economics
Khan, Abdul Waheed	Bangladesh	Study Tour	USA	Nondegree	Research station tour
Khaleque, T. M. Kibriaul	Bangladesh	Michigan State University	USA	Ph.D.	Forest sociology
Kroma, Margaret	Sierra Leone	Virginia Polytechnic Institute and State University	USA	M.S.	Rural sociology
Kunkhajonphan, Thanit	Thailand	Mahidol University	Thailand	M.S.	Environmental science
Lai Qingkui	P.R. China	University of the Philippines at Los Baños	Philippines	Nondegree	NRM/agrarian studies
Lakra, Valeria	India	University of the Philippines at Los Baños	Philippines	Ph.D.	Education extension
Li Chun	P.R. China	University of the Philippines at Los Baños	Philippines	M.S.	Forest resource management
Liang Luohui	P.R. China	University of the Philippines at Diliman	Philippines	Nondegree	Environmental planning and land use



1993 Fellows (continued)

Name	Home Country	University	Country	Degree	Discipline
Lohani, Sunil Nath	Nepal	University of the Philippines at Los Baños	Philippines	M.S.	Agricultural economics
Lugeye, Elizabeth	Tanzania	University of Missouri-Columbia	USA	M.S.	Agricultural extension
Luo Chengkai	P.R. China	University of the Philippines at Los Baños	Philippines	Nondegree	Environment and natural resource management
Ma Huanchen	P.R. China	Asian Institute of Technology	Thailand	Nondegree	Natural resource management
Mangheni, Margaret	Uganda	University of Minnesota	USA	Ph.D.	Vocational and technical education
Mankolo, Regine	Cameroon	Virginia Polytechnic Institute and State University	USA	M.S.	Agronomy
Martinez, Domingo Castilla	Peru	University of Missouri-Columbia	USA	Ph.D.	Agricultural economics
Matriu, Grace	Kenya	Pennsylvania State University	USA	Ph.D.	Agricultural and rural sociology
Maya, Iis Nana	Indonesia	University of the Philippines at Los Baños	Philippines	M.S.	Development communications
Messia, Mboussi	Cameroon	University of Arkansas, Fayetteville	USA	M.S.	Soil fertility
Nankam, Claude	Cameroon	University of Illinois-Urbana	USA	Ph.D.	Plant pathology
Napitupulu, Besman	Indonesia	University of the Philippines at Los Baños	Philippines	M.S.	Postharvest physiology
Ngaiza, Magdalena	Tanzania	Cornell University	USA	Ph.D.	Agricultural and rural sociology
Ngo Huy Duc	Vietnam	Australian National University	Australia	M.S.	Development economics
Ngoumou-Nga, Titus	Cameroon	Cornell University	USA	Ph.D.	Soil science
Nguimgo, Aubin	Cameroon	University of Nebraska-Lincoln	USA	M.S.	Crop production/soil fertility
Blaise Kemtsa			Thailand	M.S.	Agricultural systems
Nguyen HuuDung	Vietnam	Chiang Mai University	UK	M.S.	Economics
Nguyen Thang	Vietnam	London School of Economics	Thailand	M.S.	Economics
Nguyen Thi Van Anh	Vietnam	Thammasat University	Philippines	Nondegree	Development economics
Nguyen Tri Hung	Vietnam	University of the Philippines at Diliman	USA	Nondegree	Public administration
Nguyen Van Minh	Vietnam	Harvard University	Australia	M.S.	Development economics
Nguyen Van Ngai	Vietnam	Australian National University	Philippines	M.S.	Agroforestry/social forestry
Nguyen Van So	Vietnam	University of the Philippines at Los Baños	Philippines	Ph.D.	Agricultural economics
Nikijuluw, Victor	Indonesia	University of the Philippines at Los Baños	Thailand	M.S.	Natural resources development management
Niu Houngwei	P.R. China	Asian Institute of Technology	USA	M.S.	Agricultural economics
Njomaha, Charles	Cameroon	Oklahoma State University	Malaysia	M.S.	Marine ecology
Nurani, Siti	Indonesia	Universite Pertanian Malaysia	USA	Ph.D.	Fisheries
Ondara	Indonesia	Michigan State University	USA	Nondegree	Research station tour
Pal, Sunil Chandra	Bangladesh	Study Tour	Australia	M.S.	Development economics
Pham Thi Hoa	Vietnam	Australian National University	Australia	M.S.	Development economics
Pham Thi Lan Huong	Vietnam	Australian National University	Australia	M.S.	Resource management and environment science
Pham Thi Xuan Mai	Vietnam	Australian National University	Australia	M.S.	Development economics
Phan Dinh The	Vietnam	Australian National University	Philippines	M.S.	Agricultural economics
Pradhan, Naresh Chand	Nepal	University of the Philippines at Los Baños	USA	Ph.D.	Entomology
Prasadja, Imam	Indonesia	North Carolina State University	Australia	M.S.	Soil science and plant nutrition
Prasetyo, Bambang	Indonesia	University of Western Australia	USA	M.S.	Agricultural economics
Priyanti, Atien	Indonesia	University of Arkansas, Fayetteville	Philippines	Ph.D.	Forest resource management
Quddus, Md. Abdul	Bangladesh	University of the Philippines at Los Baños	USA	M.S.	Soil physics
Rachman, Achmad	Indonesia	University of Missouri-Columbia	USA	Ph.D.	Economics
Rahman, Obaidur	Bangladesh	University of Wisconsin	Philippines	M.S.	Soil science
Rochayati, Sri	Indonesia	University of the Philippines at Los Baños			

Name	Home Country	University	Country	Degree	Discipline
Rusastra, I Wayan	Indonesia	University of the Philippines at Los Baños	Philippines	Ph.D.	Agricultural economics
Sagbaiyev, Babapa	Kryghyz Republic	Study Tour	USA	Nondegree	Wool processing
Santoso, Djoko	Indonesia	Iowa State University	USA	M.S.	Biochemistry
Sayaka, Bambang	Indonesia	University of the Philippines at Los Baños	Philippines	M.S.	Agricultural economics
Sebunya, Gertrude	Uganda	Utah State University	USA	Ph.D.	Agricultural economics
Sicilima, Nicodemus	Tanzania	University of Wisconsin	USA	Ph.D.	Continuing and vocational education
Simons, Gacheke	Kenya	Pennsylvania State University	USA	Ph.D.	Agricultural economics
Siregar, Masdjidin	Indonesia	Michigan State University	USA	Ph.D.	Resource economics
Soedarjo, Muchdar	Indonesia	University of Hawaii	USA	M.S.	Soil science
Softari, Eri	Indonesia	Wageningen Agricultural University	Netherlands	Ph.D.	Cytogenetics
Sofyan, Agus	Indonesia	University of Ghent	Belgium	Ph.D.	Soil science
Suharyanto	Indonesia	Queensland University of Technology	Australia	Nondegree	Plant biotechnology
Sukarman	Indonesia	Mississippi State University	USA	M.S.	Seed technology
Sulaeman	Indonesia	Louisiana State University	USA	Nondegree	Chemistry of paddy soils
Sumiarsa, Gede	Indonesia	Asian Institute of Technology	Thailand	M.S.	Aquaculture
Sunarno, Mas Tri Djoko	Indonesia	Asian Institute of Technology	Thailand	Ph.D.	Fish nutrition/aquaculture
Sutikno, Heru	Indonesia	University of the Philippines at Los Baños	Philippines	Ph.D.	Agricultural economics
Talaebek, Kadyrkulov	Kryghyz Republic	Study Tour	USA	Nondegree	Wool processing
Tang, Yong Tao	P.R. China	University of the Philippines at Los Baños	Philippines	M.S.	Environment and natural resource management
Tasma, I Made	Indonesia	Iowa State University	USA	M.S.	Molecular biotechnology
Thai Anh Hoa	Vietnam	University of the Philippines at Los Baños	Philippines	Ph.D.	Agricultural economics
Tian Hong	P.R. China	University of the Philippines at Los Baños	Philippines	Nondegree	Environment and resource management
Tran Thanh Be	Vietnam	University of Western Sydney	Australia	M.S.	Systems agriculture
Tran Thi Dan	Vietnam	James Cook University	Australia	M.S.	Tropical veterinary science
Tran Thi Nhung	Vietnam	Australian National University	Australia	M.S.	Development administration
Tran Thi Thu	Vietnam	University of the Philippines at Diliman	Philippines	Nondegree	Development economics
Tran Tho Dat	Vietnam	Australian National University	Australia	M.S.	Development economics
Tran Quang Minh	Vietnam	Australian National University	Australia	M.S.	Development economics
Tran Van Phat	Vietnam	University of the Philippines at Los Baños	Philippines	M.S.	Natural resources management
Trisilawati, Octivia	Indonesia	University of the Philippines at Los Baños	Philippines	M.S.	Soil science
Upadhyay, Pradip	Nepal	University of the Philippines at Diliman	Philippines	Ph.D.	Rural development planning
Viriyasakultorn, Vitoon	Thailand	Michigan State University	USA	Nondegree	Forestry
Widjono, Adi	Indonesia	University of the Philippines at Los Baños	Philippines	Ph.D.	Development communications
Xie Qun	P.R. China	International Rice Research Institute	Philippines	Nondegree	Rural development
Yang Linchun	P.R. China	University of the Philippines at Los Baños	Philippines	Nondegree	Environment and natural resource management
Yu Xiaogang	P.R. China	Asian Institute of Technology	Thailand	M.S.	Natural resources development and management
Zhang Jinfeng	P.R. China	University of the Philippines at Los Baños	Philippines	Nondegree	Agroforestry
Zhao YaQiao	P.R. China	University of the Philippines at Los Baños	Philippines	M.S.	Social forestry
Zheng Bao-hua	P.R. China	University of the Philippines College, Baguio	Philippines	M.S.	Social and development studies
Zhou Dequn	P.R. China	University of the Philippines at Los Baños	Philippines	Nondegree	Environment and natural resource management
Zhou Yonghe	P.R. China	University of the Philippines at Los Baños	Philippines	M.S.	Environmental studies
Zhu Jing	P.R. China	University of the Philippines at Los Baños	Philippines	Nondegree	Environment and natural resource management

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VICKI WALKER, program assistant,
 Center for Economic Policy Studies



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Middle East

Frank E. Busby, director, United States

Susan A. Dewey, director, Human Resource
Management

James E. Ellis, director, Center for
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*Frank Tugwell, vice president, Program and
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Thomas Bauer, volunteer recruiter

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*J. Raymond Carpenter, program officer

Cloie J. Carter, accounting manager/contracts

*David Daugherty, senior program officer

A. John DeBoer, senior program officer

Diana de Treville, program officer

Sue Ettman, professional register assistant

Kenneth Eubanks, accounting supervisor

Ellen Fennell, development officer

*John Fitzgerald, program and technical
coordinator

Dean Gentry, maintenance manager

Will R. Getz, program officer

Robert Hambuchen, management information
systems manager

Pilar Hanson, senior manager, financial
budgeting and reporting

Thomas D. Hill, program associate

Gary L. Howe, contract development and
administration manager

Ron J. Hubbard, procurement manager

Nelda J. Huff, accounting officer

Theodore Hutchcroft, program officer/
communication (leave of absence to
International Rice Research Institute)

Kathi Jones, development officer

Avtar Kaul, senior program officer

Neal Kelley, program assistant

*Hazel LaCook, housing and food service
manager

Mary Laurie, public relations officer

Amy Gray Light, technical editor

Andres Martinez, senior program officer

David Mattocks, program officer

Sandra Miller, program officer/project director,
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Rural Enterprise Center

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technician

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Roger Steele, program officer

Carol Stoney, agroforestry specialist

*T. Alan Thompson, program manager

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Forrest Walters, senior program officer,
agribusiness

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Shwu-Eng Webb, program officer

Regional Office, Washington, D.C.

Norma R. Adams, publications manager

Delby Allen, assistant data center manager

Todd Barthoff, program officer

Robert Bell, Jr., program assistant

*Surbhi N. Bhatt, program associate

Joan Bouwes, administrative assistant

Steven A. Breth, program officer/
communication

*Kristin Connor, assistant manager,
administration



Phyllis Craun-Selka, project associate
 Linda Ellis, publications and marketing assistant
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 Catherine Jewsbury, senior project economist
 John Kadyszewski, director, Renewable Energy and the Environment Program
 *Bruce Larson, fellow, Center for Economic Policy Studies
 Sandra Loch, operations assistant
 Lisa McClay, accounting supervisor
 *A. Colin McClung, senior scientist/U.S. coordinator, India Plant Genetic Resources Project
 Jane Mold, research administrative assistant
 Thomas C. Niblock, program officer/project director of Asian forestry research services
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*Sibylle Scholz, agricultural economist

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