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Striking The Balance

Winrock International Annual Report 1986



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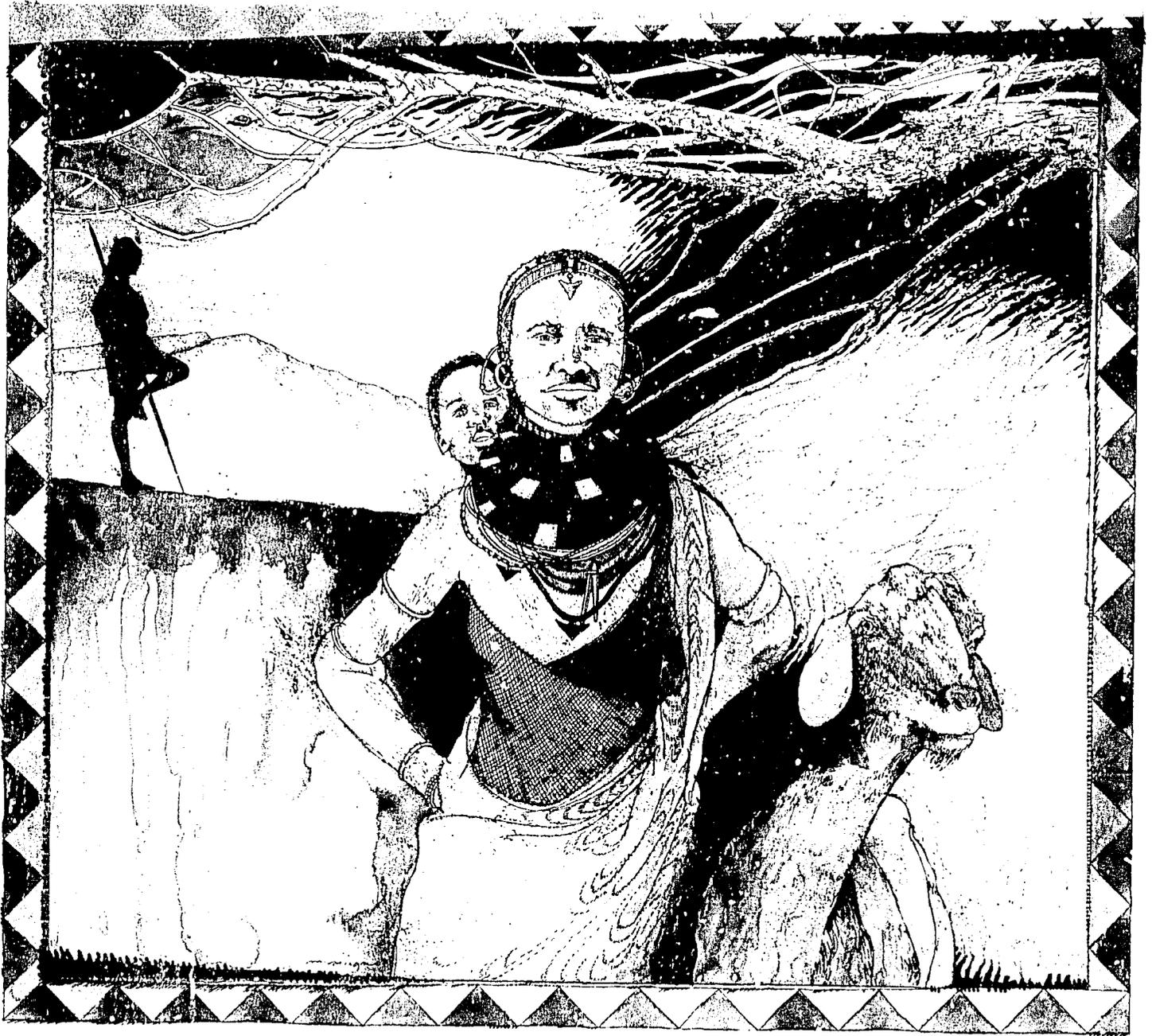
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Patterson P. Semenyé
Animal Scientist, Kenya



"There's a way for the children and the animals to thrive."

When Patterson Semenyé tells the story about the Masai parents, he'll remind you that the same tension tears at every subsistence family in the world. It's there to one degree or another with every choice they make. When you live as close as they do to the edge of survival, there's no such thing as an inconsequential decision.

For Semenyé as an animal scientist, the challenge is how to use his technical training to take the 'either/or' out of the equation. He believes there's a way for the children and the animals to thrive. That's what agricultural development has always been about.

Obviously, our main concern for decades was keeping the child alive. We—most of us in development—poured every ounce of our energies into getting to the point at which the world could simply produce enough to nourish all its people.

In the early years it certainly looked like a fool's dream, but we got there. Short of catastrophe, we can now produce enough food for everyone.

Once we reached that point, we faced a new reality: people were still starving because they couldn't get the food that was being grown. So over the past decade we've turned our



Robert D. Havener

attention more from bringing food out of the ground to putting it on the table. And the most effective way to get food to poor families is to give them the chance not to be poor anymore. We've concentrated on making agriculture the means to alleviate the poverty that underlies hunger.

And now the development community can turn its attention to another reality: we must leave our children with the resources to grow food for their children. This realization has given rise to a new password in development: sustainability. The word is becoming increasingly fashionable, but the concept has been around for decades.

"We've always worked toward research and extension systems that would endure."

In at least one sense, it's what Winrock's three parent institutions were about. Winrock

International is best known for training potential leaders and strengthening national institutions in developing countries. We've always worked toward building research and extension systems that would endure because we know that no country can achieve sustainable agricultural development without them.

In 1986 we had a chance to apply our principles to ourselves. It was our first full year of operation following the 1985 merger, and we embarked on an odyssey to define ourselves.

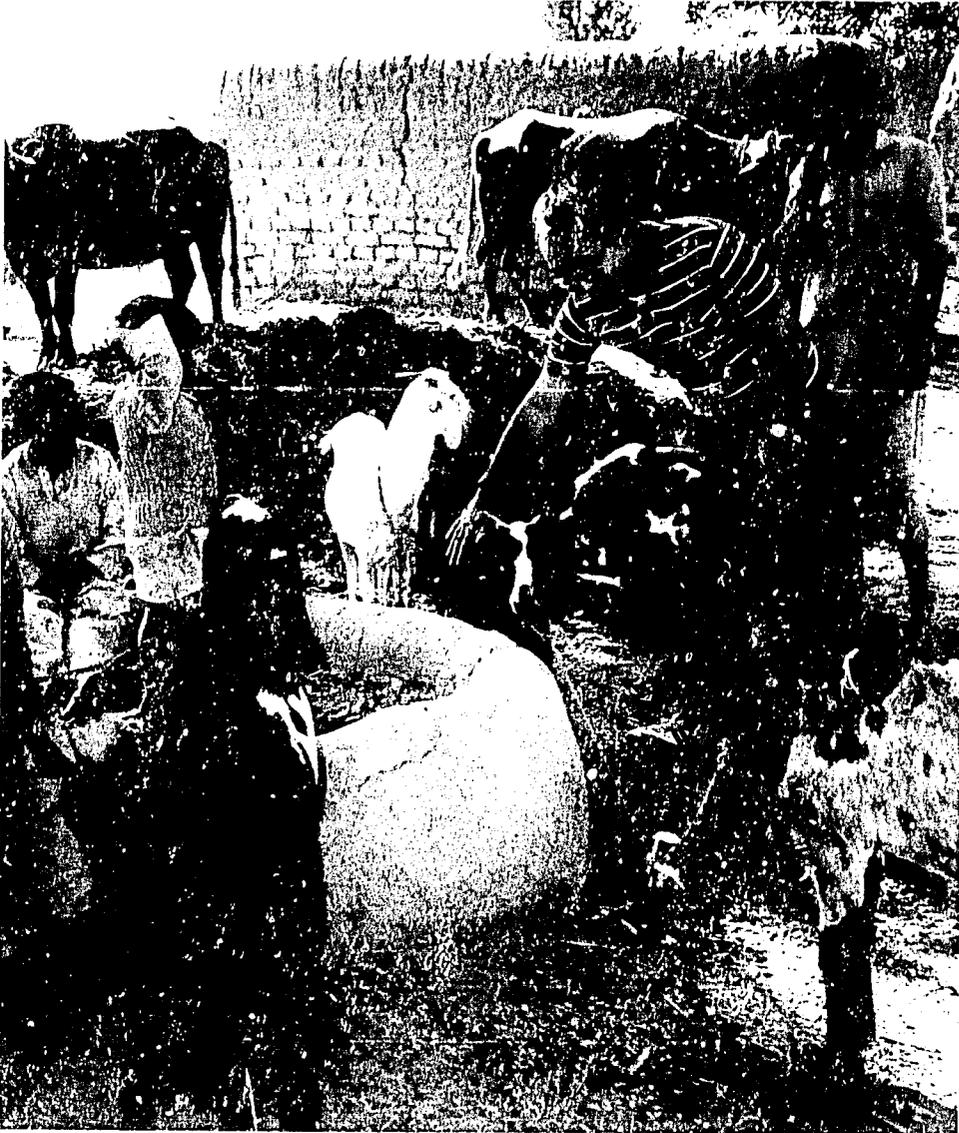
We were in uncharted waters. There isn't another organization quite like ours in development. We are both philanthropic and competitive; a nonprofit operating foundation with a full, long-term commitment to agricultural development.

We do—and appear to be—a great many things. If all you saw were some of Winrock's publications, you might assume we are a think tank. If you had contact only with our project people in Pakistan, you might conclude that we're a consulting firm. If you saw only what we're doing in Côte d'Ivoire, you'd think we are academics.

You'd be close to the mark in each case, but you'd be just off center because in fact we are all those things at the same time, and that makes us something else altogether. The whole is not simply greater than the sum of its parts; it's of a different character.

All of us at Winrock expected to be challenged in 1986. We knew

Winrock's Takumi Izuno is assisting small farmers of the Punjab of Pakistan to adopt sustainable agricultural systems that will produce food, fiber, and fuel for today and generations yet to come.



we had to be pragmatists. We knew we also had to be visionaries. Every operational choice demanded that we balance the reality of the present with our goals for the future. We had to anticipate the consequences of our actions tomorrow and 30 years from tomorrow.

Each of us had visions of what Winrock International should and

could be. We expected tension as we moved from vision to revision to reality. And tension was what we got; tension heightened by the fact that we simply don't have enough endowment to do the things we believe need to be done.

"We know we'll still be here a decade from now fighting poverty and hunger with the same fervor."

We don't have the \$100 million endowment we need; but we do have \$40 million and that gives us a stability not enjoyed by most development organizations. We know we'll still be here a decade from now fighting poverty and hunger with the same fervor.

We didn't accomplish everything we hoped we could in our first year, but we have achieved some things we wouldn't have thought possible a year ago.

One example is our agroforestry program. In many ways it mirrors Winrock as a whole, bringing together our best attributes and our most difficult problems of coordination. But it works. And it works for the poorest of the world's farmers; all the institutional wheels turn to make their lives less catastrophic.

We—as individuals and as an institution — were challenged in 1986 and we're proud of where we stood when the year ended. We expect to be stretched even more in 1987. There's a great deal that can be done to alleviate poverty; all of Winrock International's resources and all of our energies as individuals are dedicated to that end.

Our Endowment Gives Us Freedom

Richard H. Huddleston
Development Director

"The endowment frees us to explore what Winrock International can and should do to make a difference in development."

What most distinguishes us within the development community is our permanence. Because of our endowment we know that Winrock International is here to stay.

We've been in existence since mid-1985 and people are just now beginning to see how Winrock — as a nonprofit operating foundation — is different from for-profits and from institutions that depend solely on projects or grants for their existence.

Our creators understood the differences. They saw the need for an American agricultural development institute with a capital base large enough to protect it from being taken captive by projects or carried away by fads and partisan politics.

At the end of 1986, Winrock's endowment stood at \$40 million. Ideally, it frees us to explore what Winrock International can and should do to make a difference in development. That's particularly critical in these early years. We



Richard H. Huddleston

have a rich heritage, but we're a young institution. We have the potential to become a new kind of force in development. What we will be tomorrow depends on the choices we make today.

Our mission is broad — to alleviate poverty and hunger through agricultural development. The nature of our work is defined by a more narrow frame of program themes—human resources, renewable resources, animal agriculture and farming systems, agricultural research and extension, and agricultural policy.

So how do we put meat on those bones? In large part by what our people are doing today on projects all over the world.

We're helping to build national research institutions. We're training a new generation of scientists. Some of our people are out in the field up to their knees in mud; others are behind computers up to their elbows in data.

One of the things we need is to give our people the time to put their feet up once in a while and let their minds wander. We have

exceptional people. Great things happen when they can let their minds move beyond the demands of the immediate, when they can consider how to apply their experience to the challenges of development. But reflection can't be paid for with project funds; it can only be financed from institutional reserves.

That's one of the reasons I'm trying to raise endowment money. We don't want to be driven by anyone else's development agenda; and when you don't have the economic margins for this kind of thought, that's just what can happen.

It could have happened as we began to expand our African program, but it didn't because we had some financial leeway. We've been able to spend time this year considering how Winrock can best serve the Africans.

"We want economic margins wide enough to let us think ahead and look back."

When the process is complete, we will have a framework for our African program that lets us bring our resources to bear most effectively at the points where we can do the most good.

Better goats are opening new opportunities for many Haitian farmers, the result of Winrock research and training. The larger offspring and faster growth of these goats helps the farmers produce for local cash markets as well as sustain their families.



We want economic margins wide enough to let us think ahead and look back. Winrock International has a long, rich memory bank of experience in Third World development. But to learn from our experiences, we have to understand them. We have to know why some things worked so beautifully and others

fell so flat. That takes analysis, and analysis takes time.

Look at our agricultural systems unit. We have almost a dozen projects in half a dozen countries that share an emphasis on

agricultural systems. They face similar problems, but they have had virtually no opportunity for communication.

One of our agronomists heads the unit. He's helping our people in the field look at what's going right and what's going wrong on those projects and ask how things can be done better. He's setting up a system for communicating their responses, so they'll be better able to replicate each other's successes and avoid each other's failures.

What we learn through this process will help us design better projects in the future. And we'll extend our support to other institutions working on similar projects. Our primary goal, after all, is to make life better for subsistence farmers; and the more we communicate within the development community, the better we'll do that.

*"We're aiming for
\$100 million."*

So, yes, we need more money. Our immediate goal is to get the endowment to \$60 million. That would give us the kind of margin for institutional vitality—for excellence—that our creators envisioned.

But we're aiming, in the long run, for \$100 million. We believe in what we are doing. We think Winrock can do something to help people escape from poverty. Why should we have small dreams?

Contracts Give Us Strength

Richard R. Harwood
Deputy Director
Technical Cooperation Division

"We are very careful about the kinds of contracts we take on."

We're managing close to \$17 million a year in long-term development contracts. That's a fantastic amount of resources. The potential for improving farmers' lives is enormous.

Taking development from theory to action is expensive. Most of the money for that comes through bilateral arrangements between donors and developing-country governments—that is, through contracts.

In 1986, about 75 percent of Winrock's operating funds came from projects supported by contracts. So most of Winrock's work is hands-on development: working with our colleagues in the host countries, first, to help build the institutions and the scientific capability that can support agriculture. Second, to create, generate, and adapt technology. And, finally, to get the technology to farmers in production programs. That's what contracts allow us to do.

The most frequent criticism of these large projects is that they require us to do what others have designed. We have to be vigilant to



Richard R. Harwood

avoid getting trapped in poorly designed projects that could do more harm than good.

So we are very careful about the kinds of contracts we take on. They must be in our area of technical expertise and in a geographic region where there is real need. Before we commit our time and energy to a project, we have to be convinced that its design is sound and that it can have a significant impact on farmers.

The work we've done in Nepal through a succession of USAID-funded projects shows how much can be accomplished over time. The aim has always been to help Nepal reach the point that it can meet the needs of its people on a sustainable basis, out of its own resources.

In 1974, I was on a team that went to Nepal to look at the country's research needs in agriculture. We concluded that they needed to start developing their capability to absorb and adapt technology in five or six areas. They needed national research and extension

programs in rice, wheat, maize, millets and minor cereals, livestock, and farming systems. We also thought they needed a program in agroforestry.

Two years later USAID funded the integrated cereals project. I was working as a consultant with IADS then—one of Winrock's predecessors—and we won the contract. The project was designed to help the Nepalese build research and extension programs for maize, wheat, rice, and cropping systems.

High-yielding crop varieties and production technologies that were developed in these research programs were tested on local farms and then became the basis for larger production programs.

"Those projects helped usher in major food-production increases."

At the same time, we were working on a related project: testing means of getting the new varieties to farmers in the hills. They had to have better access to seed. So the Nepalese established 20 mini-seedhouses in remote areas. Now farmers are getting practical training, foundation seed, and metal storage bins and they're growing quality seed for themselves and their neighbors.

Improving a country's agricultural productivity begins with an understanding of its farmers. Michael Wallace of Winrock worked closely with farmers to come up with innovative ways of getting improved farming systems practices adopted in Nepal's hilly areas.



Those projects helped usher in major food-production increases, especially in the Terai region, the country's granary.

One of the improved rice varieties, Masuli, has become the most popular in Nepal. In 1984, land planted with Masuli was

producing at least 375,000 additional tons of rice per year. That's \$32 million in extra income for Nepalese farmers, whose incomes are among the lowest in the world.

We managed the integrated cereals project, with extensions, until 1985. Then it was redesigned.

We won the contract for its successor, the agricultural research and production project. So we know we'll have a major presence in Nepal at least until 1990.

In this project, we're focusing on the hills, where the problems are far more difficult because the resources are fewer, the environment is much more fragile, and the population pressures are greater.

"We've influenced the next generation of Nepal's agricultural scientists."

We're also helping the Nepalese put together a national organization that will coordinate and plan the country's research, production, and extension programs from a central location. That's a tough task, but it's very long range.

All of these projects have had education and training components; so we've watched—and influenced—the development of the next generation of Nepal's agricultural scientists and administrators.

When this project is completed in 1990, we will have spent more than 15 years in Nepal managing an investment of \$18 million. I'm convinced it will have been worth it.

Grants Give Us Flexibility

Paul T. Perrault
Agricultural Economist
Côte d'Ivoire

"What grants lack in scope they make up for in intensity."

Grant money gives us the opportunity to be creative and experimental in our approach to development. Less than 10 percent of Winrock's funding last year was in the form of program grants. They may not be as spectacular as the biggest contracts we undertake. But what grants lack in scope they make up for in intensity.

Consider the grants—from the Ford Foundation and the International Development Research Centre — that put me in Côte d'Ivoire in 1982. They pay for my position as visiting professor at CIRES, the Ivorian Center for Social and Economic Research at the University of Abidjan.

Neither we nor the donors had a fixed agenda to impose on CIRES. My instructions were simply to join the staff and help them do what they wanted to do. That's one of the strengths of this kind of grant-funded program.

CIRES wanted to establish a graduate program in agricultural economics, so that's what we set out to do. Today CIRES has 17 doctoral students from seven African nations. The first graduates will come out in 1988, less than six years after the idea was initially suggested. When we rave about the freedom and flexibility of grants it's because we've seen results like this.



Paul T. Perrault

All the students are funded through fellowships. CIRES raised that fellowship money from half a dozen donors. When the program reaches full strength it will have about 30 students, and the challenge will be to continue finding the financial backing those students will need.

With their fellowships, the students get \$10,000 research grants. They are all doing their research in Africa on African issues. So, down the road, there will be more relevant materials available for African decision-makers as they draft policy and for teachers as they train young people.

The tuition from the graduate program is bringing in about \$100,000 a year. This money belongs to CIRES, so now they don't have to beg from anyone to get the resources they need for their own development. CIRES is using that money to do things like stock the library, buy computers and software, and give more financial incentives to the faculty. And these things can be sustained because the institution will have funding as long as it has students.

CIRES also has improved its ability to find support for research by improving the research program itself. Six years ago this research was going in all directions. I worked with my colleagues here to more clearly define the priorities. Now the research program has a

"They're proving how much easier it is to attract funding to a coherent research program."

focus, and when they go looking for funds they know just what they want to accept and what they can turn down because it doesn't fit the agenda.

They're proving how much easier it is to attract funding to a coherent research program.

One of CIRES's objectives in 1987 is to put out an annual report with audited financial statements. In its 15 years the organization has never produced one. When it's done this will be one of the few national institutions in Africa with an annual report. And it should help to attract more support.

The 1986 financial statements will be available because IDRC gave CIRES a \$50,000 grant to improve its management procedures. My colleagues here were hesitant to ask for this kind of help; they didn't want to bring attention to their institutional weaknesses. But we know from our own experience that management can always be improved.

It All Comes Together In Our Programs: Agroforestry

William R. Bentley
Senior Program Officer

Because they did ask, CIRES will now have the resources to engage an accounting firm to help design and implement new procedures. There will be monthly financial statements and there will be audited annual statements to feature in annual reports.

On another front, I'm very concerned about how the national institutions can keep their African scientific personnel. Agricultural economists are rare in Africa, especially individuals who are well trained and bilingual. African institutions like CIRES have a hard time attracting and holding these people.

So we put forth the idea of creating academic chairs. There would be open competition for these positions and an extra \$10,000 in salary for each person chosen. The Ford Foundation bought the idea and CIRES is testing it for two years.

"We're working on the sustainability of a national research institution."

I see my job right now as working with my African colleagues to make CIRES a more lively institution—to make it more attractive to nationals who choose careers in graduate education and to donors who want to have an impact in research and policy-making at the national level. As Winrock sees it, what we're really working on is the sustainability of a national research institution.

"Winrock already had the makings of an impressive program in agroforestry."

When I joined Winrock less than six months after the merger, we already had the makings of an impressive program in agroforestry—producing food and trees from the same land.

At one end of the scale we had the big contracts: \$8 million for the Asian forestry/fuelwood project and \$4 million for the Pakistan forestry project. At the other end, we had individuals who were incorporating basic agroforestry technologies into their field work—people like Moses Onim, an agronomist in Kenya, who was setting up community nurseries where farmers could get multipurpose-tree seedlings.

My job is to take all these pieces and forge a strategically coherent program, something stronger than the sum of its parts. It's a challenge. We cut across all the lines: we've got things going all over the world; we use every kind of funding we can get; we have to draw on our staff's expertise in each of our five major program areas.

What we're doing in agroforestry is, right now, probably the most visible part of Winrock's work in managing renewable resources. Agroforestry represents the best in sustainable agriculture because it



William R. Bentley

doesn't just protect the soil, it can rehabilitate it.

It fits perfectly with our emphasis on farming systems because the presence or absence of trees has so many effects on farms. One example: fuelwood shortages are forcing millions of farm families to burn dung and crop residues for fuel instead of using them to fertilize their land. And their crop yields are dropping. Well, we can tailor technologies for farmers so they can get fuelwood and food or cash crops by working trees into their farming systems.

We've simply got to start looking at trees as part of the whole. That's beginning to happen in Nepal. In our project there we're helping establish an agroforestry unit in the national agricultural research system.

Agricultural research and extension is another one of our program themes. Agroforestry involves enormously complex biological systems. But we don't know much about them because research and extension have historically favored single-crop systems.

Agroforestry helps the very poor, such as this Ethiopian woman, to adopt sustainable agricultural systems that will produce the food, fuelwood, and fodder they need.

"The people who must desperately need agroforestry technology are the very poor."

So we need research; we also need some new approaches to that research. We used to generate technology and then figure out how to package it so the farmer would want to use it. We now recognize that we have to start at the other end. And standing at the other end are farmers we don't know enough about. The people who most desperately need agroforestry technology aren't rich or middle-class, they're the very poor.

In Bangladesh, 90 percent of the fuelwood and over half the sawtimber come from one percent of the land: the homesteads. These are tiny plots just above flood stage where the women raise fruits and vegetables and get fuelwood and fodder for the livestock.

We've got to understand their needs before we can design an agroforestry technology to help them. That means we've got to listen and talk to them. But traditionally trained foresters aren't used to working with farmers, male or female. And most extension workers aren't used to working with women.

The Ford Foundation is interested in helping the women of Bangladesh, so they gave us a grant to train foresters and extension workers in how to deal with them.

Policy is another area where our agroforestry program dovetails



with our expertise. One of the main reasons the forests are over exploited is that, generally, they are on public lands. It's unfortunate but true that people—particularly poor people—aren't likely to conserve resources that aren't theirs. So national policy issues like land-tenure rights affect the kinds of technologies we can recommend to farmers. A perfect technology requiring a cash investment from the farmer won't go very far if everyone's cattle can graze on the land we're asking him to invest in.

Our policy program is still in its early stages of development. One of the things we want to do is help developing-country institutions build their analysis capability so they can provide reliable scientific information to policymakers.

Finally, Winrock's human resource development skills come into play in virtually every agroforestry project we have. You see it on a small scale in the training project in Bangladesh. You

see it on a grand scale in our India project. The Indian government is moving forestry education into the state agricultural university system and is setting up more than a dozen new bachelor's-degree programs.

The men and women who'll head the new agroforestry research and education programs are being trained at U.S. universities. We're managing that training. And we're helping them design the forestry curricula and training packages for the new programs.

"You couldn't find a more exciting field to be in right now."

You can imagine what a nightmare it is sometimes to keep up with a program like this. But you couldn't find a more exciting field to be in right now. It's extremely demanding technically, but the potential for really making peoples' lives better is enormous.



Handling The Prize Gives Us A New Slant On Ending Hunger

Edward L. Williams, Administrator
General Foods World Food Prize

There's never been a prize like this — not one this substantial, devoted exclusively to individual accomplishments in the complex realm of food.

For more than a decade Norman Borlaug used his considerable international prestige to plead for the creation of such an award. He wanted recognition for the men and women who devote their lives to feeding the world. When General Foods caught the vision, Dr. Borlaug was delighted.

The \$200,000 prize will be given each year to the individual judged to have made the greatest contribution to improving world food quality, quantity, and availability.

We know that the global community will, to some extent, measure the prize by the character and accomplishments of the first laureate. So we were understandably impressed and pleased with the selection committee's choice of M. S. Swaminathan, a craftsman of the highest order. He may be best known as the architect of the Green Revolution in India, but his contributions have spanned a lifetime and several continents. The committee couldn't have chosen a more perceptive and eloquent spokesman for the global food system and for the prize itself.

The prize will be given to Dr. Swaminathan at the Smithsonian Institution in October. The award ceremony will be part of a major international symposium on food issues sponsored jointly by General Foods and the Smithsonian.

Dr. Swaminathan was selected from a group of nominees representing a score of disciplines in food and agriculture from 22 countries on 5 continents. One of the reasons

An original sculpture symbolizes the international stature of the food prize.



Winrock was chosen to administer the prize is that we had the ability to handle the worldwide search for nominees. But, more important, General Foods wanted an organization expert in the full range of food and agricultural sciences—one that understood the global scale of food issues. We fit the 'job description' perfectly.

We're truly excited about our involvement as secretariat of the prize. We believe the prize will stimulate interest and encourage international cooperation in the pursuit of solutions to the problem of hunger. We hope it will hasten the day when a sufficient, healthful diet is common to all people.



People Are The Key To Our Success

Dilbagh S. Athwal, Director
Technical Cooperation Division

A donor's decision to accept or reject a proposal probably rests, in the final analysis, on the quality of the people recommended for staff positions. If we are successful as an institution, it is because of our people. Any discussion of project highlights must begin there.

We have a talented, dedicated staff at Winrock. On the front lines we have more than 80 of our people posted in developing countries. They are backed by 170 fellow scientists, administrative specialists, and outstanding support personnel in Arkansas and Washington.

We're involved in more than 60 projects in two dozen countries funded by 20 different donors. In 1986 we took on a dozen new projects, ranging from a \$7,000 contract to evaluate a USAID project in Brazil to a \$4 million contract to help strengthen Pakistan's agricultural research system.

In 1986 we put a team in Burma in an institution-building project, began an irrigation project in India, and initiated a policy-analysis project in the Philippines. In Africa, we started two new projects that focus on human-resource development in the rural social sciences and began work on a farming-systems-research project in Burundi. In Latin America we were awarded a contract to support the graduate studies of more than 200 Argentines.

As significant as the projects we began last year were the ones we completed. The largest—and longest term—was the Kiboko range research project. When we first went to Kenya seven years ago, the Kiboko research station was drastically short on facilities, equipment, and trained scientists. By the time we left in 1986 it was leading the nation's rangeland research.

M.S. Swaminathan,
first laureate,
General Foods World
Food Prize.

The Farmer Would't Let The Revolution Stop Our Work

Sara K. Guthrie
Agricultural Economist, Haiti

A great deal happened in Haiti in 1986, and we can't talk about the goat project without saying something about the revolution. Its impact on us was mixed, but because the Papaye Farm was in an area of the country that remained relatively quiet during those days of turmoil, we were able to continue work there essentially uninterrupted.

I'm sure one of the reasons project activity at Papaye was not disrupted was that the small farmers with whom we've been working for five years have experienced the benefits of this project and did not wish to see it stopped.

We've directly touched the lives of close to 8,000 people in the Hinche agricultural district alone. Those are the families with ties to the 66 small-farmer groups that have received training, improved bucks from our

goat-breeding program, and follow-up support from the extension team.

The farmers are convinced that the project is enabling them to produce superior goats and they tell us so all the time. Because of better breeding and better management, the improved animals' offspring are larger at birth and grow faster than local goats. The more farmers see these traits turned to their economic advantage, the more demand there is for improved animals.

We continued our research this year with feeding, forage production, and marketing studies. We also established eight satellite breeding centers throughout the country. The centers are managed by farmer groups, development organizations, and individuals so the benefits of the project extend to many more communities now.

Part Of Our Function Is To Get People To Talk

Henry A. Fitzhugh, Director
Planning and Analysis Division

There's no doubt that agricultural and economic development in the Third World has profound effects on American farmers. The question is whether—on balance—the effects are more beneficial or harmful. It can be a contentious issue.

In October Winrock and the National Planning Association invited some interested parties—from U.S. farm groups, development-assistance agencies, land-grant universities, foundations—to come here to Petit Jean Mountain and just talk, face-to-face.

We had a day and a half of intensive, frank discussions. By the end of it we appreciated each other's problems a little better and were able to articulate the points at which we do agree.

It was only the start of a process, but it was a significant start. It is important that people with different perspectives engage in dialogue like this. We, as an institution involved in both domestic and international development, are a natural catalyst for such communications.

Winthrop Rockefeller built the facilities here on the mountain and he loved to bring disparate—even adversarial—groups together. He'd gather them in this peaceful atmosphere where they could let their guards down and get to the heart of issues. We carry on that tradition and that's why this is just the kind of conference we like to host.



Farmers in the Hinche district of Haiti have close ties with the goat production project at the Papaye Farm. Many of these farmers were trained in improved management practices by Edwin W. Geers, Rudy Gaspard and others of the Winrock team.

We're Setting A New Pattern For North-South Exchange

Guy B. Baird, India Coordinator
Management Support Services
for Agriculture

We are participating, through a management-support services contract with the USAID mission here, in a very promising Indo-U.S. agricultural research program. It's based on the hypothesis that the best way the United States can help India at this point in its development is by strengthening ties between scientists of the two countries. The program is helping to set a whole new pattern for north-south technology exchange.

The central project, the Agricultural Research Project, is expected to cover 13 research topics of interest to both U.S. and Indian scientists. The topics run the gamut from agrometeorology to postharvest technology for fruits and vegetables.

Our role is to help the Indian scientists find the training, specialized equipment, and U.S. scientists they need to get collaborative research programs off the ground in each area. We're sending Indian scientists to the United States, bringing U.S. scientists to India, and procuring scientific equipment that's not manufactured in India.

In 1986 we started assisting the Indian Council of Agricultural Research as they help the state agricultural universities set up new departments of forestry.

We placed 18 Indian scientists—all faculty in these schools—in U.S. land-grant universities. They'll have a year of specialized training in forestry that is tailored to make them better teachers. We also helped the council design the curriculum and training packages for the new forestry departments.

Even We Were Surprised By The Extent Of Our Success

Janet C. Sturgeon
Program Grants Manager

Workshops arranged by Winrock are upgrading agricultural economics in Chinese universities and government agencies.



If I had to point to one accomplishment of which we were particularly proud in our China program in 1986, it would be the workshop on rural finance held at Southwest Agricultural University in Sichuan.

We'd been asked by the Chinese Ministry of Agriculture, Animal Husbandry and Fisheries to take part in a series of curriculum-development workshops in agricultural economics. They were designed to improve the teaching skills of instructors at agricultural universities and colleges.

This particular workshop was successful far beyond our expectations. Rural-finance instructors from all over China attended. Many of these men and women had taught in isolation for years. They were as pleased to have an opportunity to meet their Chinese colleagues as they were to meet the Winrock team.

We designed the course on what has been for us a quite successful pattern of sending a senior professor and a more junior person, one of whom speaks Chinese, to team teach. In this case, we arranged for two U.S. agricultural economists to introduce the Chinese to rural-finance curricula.

One group of participants was so motivated by the experience that they decided to form their own research network. They've already translated into Chinese a set of U.S. papers on rural finance. We're giving them modest support so they can print and distribute the translations. We also hope to start a small research-awards program for them.

We Don't Want Isolation To Rob African Scientists Of Their Vitality

Wayne P. Miller, Program Officer

Probably nowhere are the problems of professional isolation for social scientists more pronounced than in Africa. This is especially true for agricultural economists.

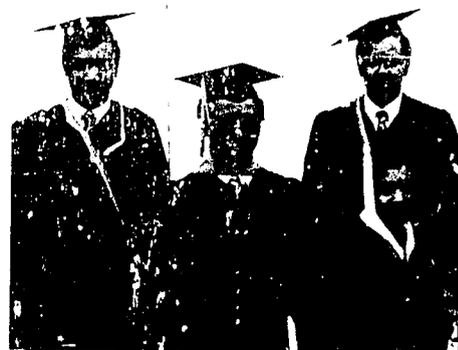
In most countries there are few of these scientists and they have little opportunity for meaningful exchange with their peers. But to grow professionally and to be effective leaders they need to stay current and involved in their disciplines.

Our Pan African Social Science Networks program is designed to strengthen interaction among African agricultural economists whether they teach, extend new ideas and technology, conduct research, or set agricultural policy.

In 1986 we sent out a call for research proposals from Africans in these fields. We received 75 proposals and have invited the authors of 35 of these to a workshop on research methodology. At the workshop they'll discuss and revise their proposals and we'll grant research awards of up to \$5,000 to the best of these.

We're developing networks, each with 6 to 10 scientists working on similar topics, and we'll provide funds and opportunities for the scientists to meet periodically to discuss their research progress and problems. We'll also make money available for publishing the research results.

The Ford Foundation is supporting this program. Winrock staff people in the states and in Africa are encouraging its development. But it is Africans themselves who are making it work.



Individual Growth Is A Foundation For National Development

Lynne Brookes
Fellowship Program Manager

Fellowships provide dynamic opportunities for growth and development. To most young men and women in the developing world, being awarded a fellowship for advanced-degree training is more than an opportunity for personal advancement. It's a chance to become part of their nation's leadership and to contribute to making life better for their people.

Fellowship programs are one of the mainstays of Winrock's human resource development activities. In 1986 we managed 360 fellowships for students from 12 countries. These scholars were professionals drawn from agricultural institutions. They'll return to their home countries to resume positions in research, teaching, administration, and policy-making.

Two out of every five were pursuing doctoral degrees. In all, the fellows were attending 97 universities and institutes in 17 countries. Their fields of study ran a range of agricultural specialties—from agronomy to parasitology.

Funding for the fellowships came from a variety of sources: some were supported by independent donors; others were part of technical-assistance contracts with governments and other agencies.

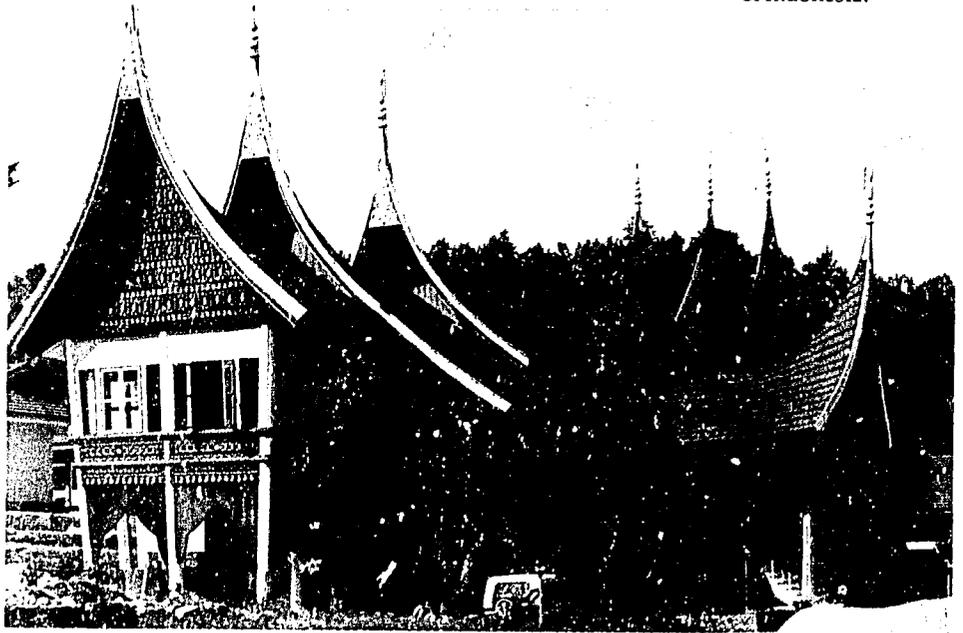
While fellowships produce qualified and effective scientists, we see them as only one aspect of human resource development. We also focus attention on—and marshal resources for—continuing professional support for these men and women. The broader goal is that these individuals working within their institutions will encourage national economic development.

African social scientists are strengthening their research and teaching skills. Winrock assists with graduate fellows and networking programs.

They Can Do First-Class Research In Sumatra Now

Pierre Antoine, Program Officer

The distinctive Sumatran architecture of the Sukarami research center symbolizes the facility's focus on the problems of upland farming that are common to the less-populated islands of Indonesia.



Seven years ago there were four poorly equipped, understaffed experiment stations in Sumatra. Then the Government of Indonesia made a commitment to build a first-class research network on the island. Today there are nine stations with the offices, the labs, the equipment, and the scientists they need to do the job that needs to be done.

The Sumatra project has been as successful as any development project I've ever seen; and I believe part of the reason is that the Indonesians had a clear perception of the kind of external assistance the project required, and we were able to provide that assistance.

We worked together with the Indonesians on everything from designing and constructing the station compounds to setting long-term research goals. We were available to do anything that needed to be done while personnel were being trained to manage all the stations.

When the project started, Indonesia had already gone a long way toward building a solid national research system. But the emphasis had been on lowland agriculture because that's where most of the country's food comes from. They needed a credible and sustained research effort to deal with the problems of upland cultivation, which is more common on the less-populated islands like Sumatra.

The Indonesians are pinning a lot of hope for future food production on the less-populated islands, and that's why USAID gave high priority to this project. Less than a third of Sumatra's arable land is cultivated now; but as the research stations come up with solutions to farmers' problems, Sumatra's agriculture is going to be a lot more productive.

Development Is Many Individuals Doing What They Do Best

Robert D. Havener, President

The World of
Winrock International
1986 - 1987

One of the reasons Winrock is effective is that we find the best people and give them the chance to work with colleagues whose skills complement their own. There should be no loners in this business; it is only by working on interdisciplinary teams that we can adequately address the problems of development. Each individual's talent, experience, and insight are essential to success.

The same principle applies to development as a whole. Winrock is one participant, one with a specialized set of skills. We cannot—and would not want to—do our work alone. Donors, implementing agencies, host-country institutions, and farmers contribute their own expertise and perspective to development.

Many organizations and individuals—through grants, contracts, and donations to Winrock International—are partners in the effort to alleviate hunger and poverty. We appreciate the opportunity to work with each one.

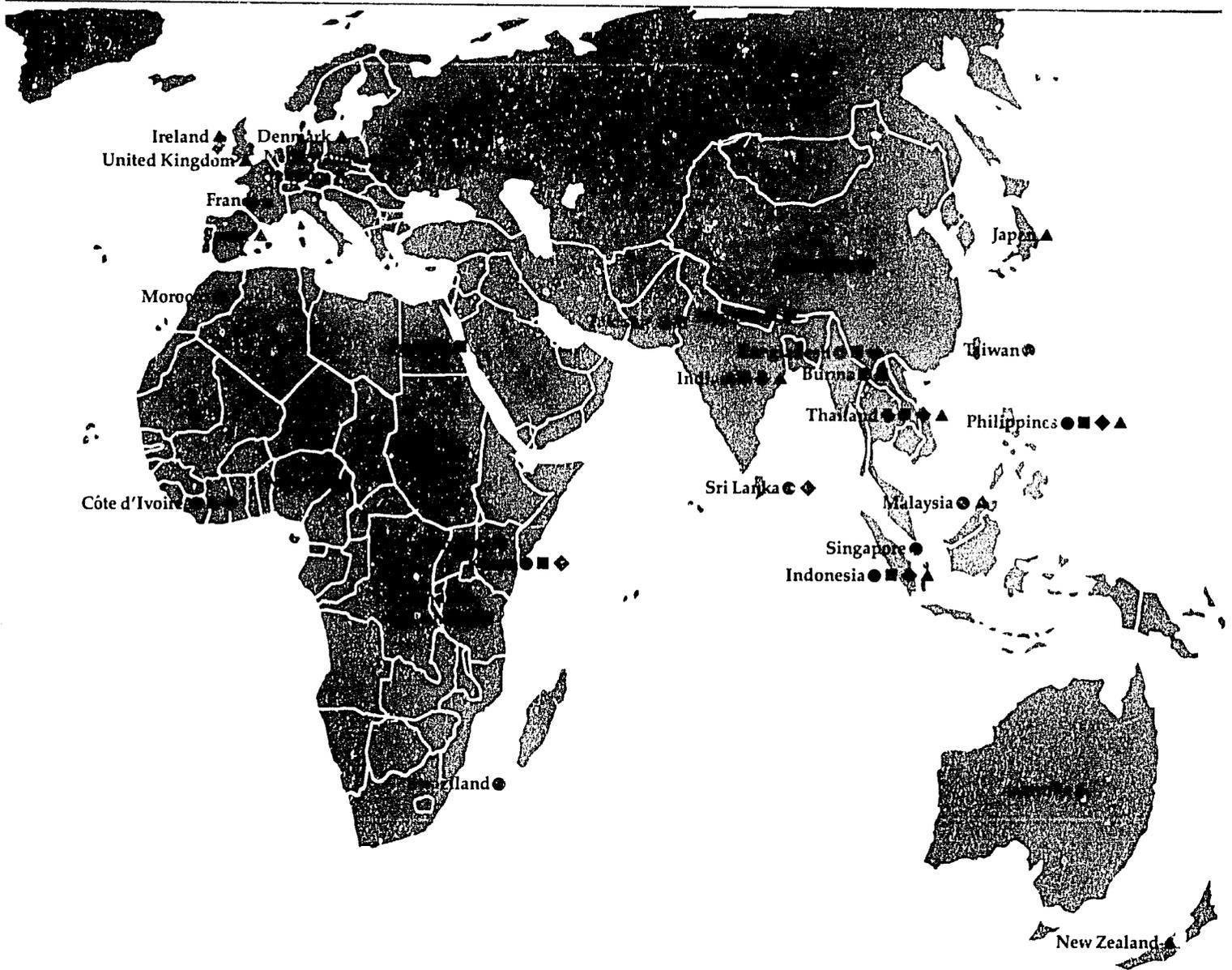
Grants, Contracts, And Donations

Academy for Educational Development*
Asian Development Bank
Australian Development Assistance Bureau
Banbury Fund
Caribbean Agricultural Research and Development Institute
Centre Ivoirien de Recherches Economiques et Sociales
Chase Manhattan Bank
Citibank
Consortium for International Development*
Ford Foundation
Fort Valley State College

Fundación Hondurena de Investigación Agrícola
General Foods Fund
German Agency for Technical Cooperation
Grazing Lands Forum
H. J. Heinz Foundation
Instituto Nacional de Tecnología Agropecuaria
International Bank for Reconstruction and Development (World Bank)
International Business Machines Corporation
International Development Research Centre
International Foundation
International Fund for Agricultural Development
International Maize and Wheat Improvement Center
John Deere Foundation
Mr. Laurance Rockefeller
National Park Service,
U.S. Department of the Interior
Office of Technology Assessment,
United States Congress
Pennsylvania State University
Price Waterhouse
Rockefeller Brothers Fund
Rockefeller Foundation
Sheep Industry Council
Skaggs Foundation
South-East Consortium for International Development*
Swiss Development Corporation
Texas Agricultural Extension Service
United Methodist Church
United States Agency for International Development
United States Department of Agriculture
United States Forest Service,
United States Department of Agriculture
University of Arkansas at Fayetteville*
University of California, Davis*
Winthrop Rockefeller Charitable Trust
Winthrop Rockefeller Foundation



*Lead agency for a USAID-funded project in which Winrock International is a partner.



- Winrock Activities
- Winrock Staff Posted
- ◆ Fellows
- ▲ Universities

¹ Winrock staff posting in Antigua completed in 1986.

² Winrock staff posting to Burundi began in 1987.

³ Winrock staff posting in St. Lucia completed in 1986.

⁴ Winrock staff posting in Uganda withdrawn in 1986 because of unstable condition in the country.

Winrock International also provided services to agricultural institutions in many other countries in 1986 under regional and worldwide project contracts.

1986 Project List

Project/Purpose	Funding Source	Amount (U.S. Dollars)	Duration
Worldwide			
<i>Economic Analysis of Small Ruminant Production and Marketing Systems (Title XII) (Brazil, Indonesia, Kenya, and Peru)</i> Evaluating the economic feasibility of efforts to improve the productivity of small ruminants and thereby raise 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	1,560,000	1979 - 1990
<i>Forestry/Fuelwood Research and Development</i> Improving land-, water-, and human-resource management and increasing employment and income by improving the planning and management of forestry/fuelwood research, developing networks of scientists and institutions, and enabling countries to address their critical forestry/fuelwood needs through better use of on-farm forestry techniques. These activities are directed mainly to Asia.	USAID	8,949,000	1985 - 1990
<i>General Foods World Food Prize</i> Administering the foremost international award that recognizes, encourages, and rewards outstanding individual achievement in improving the world food supply. It is intended to attract talented, creative, and dedicated young people to careers in food and agriculture.	GFF	100,000 annually	1986 - continuing
<i>International/National Park Service Rangeland Information Base</i> Increasing the awareness of and information about sound management and development of rangelands, with pilot project activities conducted in Costa Rica and Rwanda.	USDI Winrock	572,000	1983 - 1986
<i>Technical Assistance in Animal Agriculture to Private Voluntary Organizations</i> Provided services to U.S.-based and indigenous nonprofit corporations, host-government institutions, and small-producer cooperatives and associations that are working to improve animal agriculture.	USAID Winrock	1,343,000	1981 - 1986
<i>Project Design and Evaluation Indefinite Quantity Contract</i> Provided cooperating host countries and U. S. agencies with short-term technical services to plan, design, and evaluate programs, including 1) sectoral and broad program analyses, 2) studies and analyses of specific USAID assistance programs and projects, 3) design and evaluation methodologies, and 4) instructions for using the methodologies. The following work orders were completed in 1986: <i>Morocco Dryland Agriculture Applied Research Project</i> Performed midterm evaluation of the project, recommended project adjustments, and forecast future needs. <i>Semi-Arid Food Grains Research and Development</i> Completed a final paper for Phase II of the project in sub-Saharan Africa. <i>Title XII Collaborative Research Support Programs</i> Evaluated the tropical-soils, bean-cowpea, sorghum-millet, and small-ruminant programs and recommended future activities. <i>USAID-assisted Agricultural University Development Programs</i> Reviewed the impact of USAID assistance to Ahmadu Bello University, the University of Ife, and the University of Nigeria. <i>Western Sudan Agricultural Research Project</i> Evaluated the project and recommended project amendments and future activities.	USAID	1,350,000	1984 - 1986

Key to Funding Sources

AAUMC	Arkansas Ave. United Methodist Church	Skuggs	Skuggs Foundation
ADAB	Australian Development Assistance Bureau	SDC	Swiss Development Corporation
ADB	Asian Development Bank	UPLB	University of the Philippines at Los Baños
CSDGMC	Central States Dairy Goat Marketing Cooperative	USAID	U.S. Agency for International Development
Ford	Ford Foundation	USDA	U.S. Department of Agriculture
GFF	General Foods Fund	USDI	U.S. Department of the Interior
GTZ	German Agency for Technical Cooperation	World Bank	International Bank for Reconstruction and Development
IDB	Interamerican Development Bank	Winrock	Core funds, Winrock International Institute for Agricultural Development
IDRC	International Development Research Centre	WRF	Winthrop Rockefeller Foundation
Pel-Freeze	Pel-Freeze Rabbit Meat, Inc.		
RF	Rockefeller Foundation		

Project/Purpose	Funding Source	Amount (U.S. Dollars)	Duration
Africa			
<i>Pan African Networks for Rural Social Science Research</i> Developing a program of training and research for rural social scientists in Africa that emphasizes research networks.	Ford	500,000	1986 - 1989
<i>Pan African Training and Research Development</i> Strengthened teaching and research in the rural social sciences, in particular by enabling greater interaction among African agricultural economists.	Ford Winrock	280,000	1984 - 1986
<i>Seed Study</i> Preparing a background paper and conducting a workshop on ways to enhance the capabilities of African countries to produce and use high-quality seed of important crops.	SDC USAID Winrock	75,000	1985 - 1988
Antigua			
<i>Economic Analysis of the Antigua and Barbuda Livestock Sector</i> Conducted an economic analysis of the livestock sector of Antigua and Barbuda: analyzed production costs, assessed domestic and potential export markets, and recommended policies, particularly concerning land tenure and price control.	USAID Winrock	60,000	1985 - 1986
<i>Livestock Improvement</i> Increasing livestock productivity and improving the quality of livestock products for local use and in the tourist trade in Antigua and Barbuda.	USAID	648,000	1984 - 1987
Argentina			
<i>Fellowship Program</i> Supporting graduate studies outside Argentina for 212 staff members of the National Institute of Agricultural Technology (INTA)—180 for master's degrees and 32 for doctoral degrees--and providing 128 person-months of short-term training and study tours for INTA personnel.	IDB	8,880,000	1986 - 1989
Asia			
<i>Fellowship Program</i> 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.	ADAB Winrock	283,000	1978 - continuing
<i>Publications</i> Publishing reference works and research on topics relating to upland development.	Ford	19,000	1985 - 1987
Bangladesh			
<i>Agricultural Research, Phase II</i> Supporting the improvement of planning, management, facilities, and services for research; and encouraging the growth of research programs, especially those concerned with improving crops, managing soil and water, controlling pests, and using the farming systems approach.	USAID	21,800,000	1981 - 1987
<i>Potato Research</i> Strengthened production-oriented research and training for scientists to conduct improved research on potatoes.	ADAB	572,000	1982 - 1986
<i>Professional Development in Social Sciences</i> Supporting 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 USAID Winrock	1,415,000	1984 - 1989
Brazil			
<i>Economic Analysis of Small Ruminant Production and Marketing Systems (Tille XII) (See "Worldwide.")</i>			
<i>University of Ceará Evaluation</i> Evaluated the impact of the University of Arizona's 10-year, USAID-funded contract to support the programs of the University of Ceará.	USAID	7,000	1986

1986 Project List (continued)

Project/Purpose	Funding Source	Amount (U.S. Dollars)	Duration
Burma			
<i>Agriculture Research and Development</i> Strengthening production-oriented research on maize and oilseeds; developing the ARI station at Yezin and satellite field stations in four agroclimatic zones; and providing short-term training for ARI scientists.	USAID	1,546,000	1986 - 1990
Burundi			
<i>Small Farming Systems Research</i> Generating improved technologies for small farmers, upgrading professional skills of research and extension staff, and strengthening linkages between agricultural research and the farming community.	USAID	975,000	1986 - 1991
Caribbean			
<i>Caribbean Agricultural Research and Development Institute (CARDI)</i> <i>Farming Systems Research and Development</i> Developing economically viable, farm-tested and -validated technological improvements in crops, livestock, and crop/livestock combinations; establishing a system of close research/extension and private-sector linkages. Primary contractor: South-East Consortium for International Development.	USAID	316,000	1984 - 1988
China			
<i>Research and Training</i> Developing Chinese capacity in agricultural economics and policy-making by sponsoring shortcourses for teachers and students and fellowships for master's-level degree study and by participating in curriculum-development workshops and in joint research and publication.	Ford Winrock	1,277,000	1983 - 1987
Côte d'Ivoire			
<i>Developing Graduate Training in Agricultural Economics</i> Researching, developing staff for, and beginning a doctoral-degree program at the Ivorian Center for Economic and Social Research.	Ford IDRC	368,000	1984 - 1988
Egypt			
<i>Data Collection and Analysis</i> Supported the Agricultural Economics Research Institute in analyzing food and agricultural policy issues.	USAID Winrock	476,000	1982 - 1986
El Salvador			
<i>Dairy Cattle Workshop</i> Presented a two-day workshop on nutrition, management, and health aspects of dairy cattle imported into El Salvador from the United States, concentrating on preventing morbidity and mortality in imported animals.	USAID	13,000	1986
Haiti			
<i>Agricultural Development Support II</i> Working with the Ministry of Agriculture to analyze predominant farming systems in two regions of Haiti and to test alternative crop and livestock technologies that could improve the farming situation. Primary contractor: University of Arkansas	USAID	970,000	1984 - 1988
<i>National Goat Production Improvement</i> Assisting Haiti's Ministry of Agriculture, Natural Resources, and Rural Development to establish an effective national goat production-improvement program within its framework and its national agricultural development priorities.	AAUMC USAID Winrock	1,207,000	1984 - 1987

Project/Purpose	Funding Source	Amount (U.S. Dollars)	Duration
Honduras			
<i>Technical Assistance to Fondo Ganadero</i> Providing technical assistance to establish a livestock in-kind credit corporation.	USAID	1,555,000	1984 - 1988
<i>Training for Small-scale Swine Producers</i> Supported a visit and exchange program for Honduran small-scale swine producers affiliated with the Overseas Education Fund Swine Production Project.	USAID	66,000	1985 - 1986
<i>Honduras Indefinite Quantity Contract</i> Short-term technical assistance to the government of Honduras to address constraints in nine subject areas of agricultural and economic development.	USAID	875,000	1983 - 1986
<i>Impact Evaluation of Rural Technologies</i> Determined the extent to which the project developed in Honduras the institutional capacity to adopt, develop, test, demonstrate, and deliver light-capital technologies to small farmers, small enterprises, and rural families.			
<i>Kansas State University Technical Assistance</i> Evaluated the technical assistance provided by the university to the Honduran Agricultural Marketing Institute.			
India			
<i>Irrigation Training and Research</i> Supporting India's programs to increase irrigated agricultural production through improved efficiency of irrigation systems and improved productivity of water delivered through irrigation systems to farmers' fields. Primary contractor: Louis Berger, Inc.	USAID	1,669,000	1986 - 1992
<i>Management Support Services for Agriculture</i> Enhancing the capabilities of the national agricultural research system of India to conduct research on high-priority problems that require scientific and technological development, particularly in areas such as soybean processing and use, postharvest technology of fruits and vegetables, forestry education, embryo transfer in livestock, conversion of biodegradable waste for animal feeds, and plant genetic resources.	USAID	2,427,000	1985 - 1990
Indonesia			
<i>Agricultural Planning</i> Improving the capacity of the Ministry of Agriculture to analyze agricultural policies and plans and to make analysis part of the process of formulating national and local policies and programs.	USAID	2,952,000	1985 - 1989
<i>Economic Analysis of Small Ruminant Production and Marketing Systems (Title XII)</i> (See "Worldwide.")			
<i>Livestock Sector Review</i> Reviewed the Indonesian livestock sector to provide a framework for cost-effective, long-term development strategies.	ADB	312,000	1985 - 1986
<i>National Agricultural Research, Phase II</i> Strengthening the national agricultural research system by improving research programs and facilities and by training Indonesian scientists.	World Bank	13,510,000	1982 - 1987
<i>Sumatra Agricultural Research</i> Strengthening agricultural research and development capabilities in Sumatra, particularly for food crops and cropping systems.	USAID	2,985,000	1979 - 1987
<i>University Training in Rural Social Sciences</i> Strengthened the capacity of faculty members in the Indonesian university system to analyze problems in and design policies for agricultural and rural development.	USAID Winrock	661,000	1984 - 1986

1986 Project List (continued)

Project/Purpose	Funding Source	Amount (U.S. Dollars)	Duration
Kenya			
<i>Dual-purpose Goat Production Systems for Smallholder Agriculturalists (Title XII)</i> Developing and adapting dual-purpose goat-production systems for use by family farmers, and designing and testing year-round feeding systems. Primary contractor: Small Ruminant Collaborative Research Support Program.	USAID Winrock	1,624,000	1979 - 1990
<i>Economic Analysis of Small Ruminant Production and Marketing Systems (Title XII)</i> (See "Worldwide.")			
<i>Kiboko Range Research</i> Developed an expanded range/livestock research program for the arid and semiarid rangelands of Kenya and trained a cadre of Kenyans to staff this program.	USAID Winrock	5,261,000	1979 - 1986
<i>Research and Training Support in Rural Social Sciences</i> Strengthening research and training in the rural social sciences at the University of Nairobi through scholarships, research awards, seminars, and publications.	Ford	200,000	1986 - 1988
<i>Sociology of Dual-purpose Goat Systems</i> Evaluating acceptance of dual-purpose goat technology by farm families in western Kenya.	RF	35,000	1986 - 1987
Nepal			
<i>Agricultural Research and Production</i> Improving delivery of agricultural production technology to small farmers, particularly in the hills.	USAID	5,718,000	1985 - 1990
<i>Improving Research Capacity in the Rural Social Sciences</i> Strengthening resource-management capabilities, building human capital in the area of rural social science research, encouraging and guiding policy-oriented research, and stimulating debate on development issues.	Ford GTZ USAID	2,667,000	1982 - 1987
<i>Strengthening Policy Research</i> Provided a consultant/research specialist for the research and planning unit of the Agricultural Projects Service Center (APROSC) and assisted the APROSC staff in establishing a productive research program.	IDRC	55,000	1985 - 1986
Pakistan			
<i>Forestry Planning and Development</i> Assisting the government of Pakistan to increase the production of trees for fuelwood on privately owned farmlands in the rainfed areas with the aim of reversing the trend toward denuded landscape.	USAID	4,137,000	1985 - 1989
<i>Management of Agricultural Research and Technology (MART)</i> Strengthening the performance of the national agricultural research system to generate and disseminate high-quality and relevant technologies to Pakistani farmers.	USAID	4,098,000	1986 - 1991
Peru			
<i>Economic Analysis of Small Ruminant Production and Marketing Systems (Title XII)</i> (See "Worldwide.")			
Philippines			
<i>Agricultural Policy Analysis</i> At the University of the Philippines at Los Baños, strengthening the capabilities of the Economics and Agricultural Economics departments of the College of Development Economics and Management to conduct agricultural policy research.	UPLB USAID Winrock	866,000	1985 - 1987
<i>Economic Analysis of Crop-Livestock On-Farm Testing</i> Developing training material for the economic analysis of on-farm livestock trials and holding workshops and seminars in developing countries on methods of livestock trials and analysis of data.	USAID Winrock	112,000	1986 - 1987
<i>Forestry Technical Assistance</i> Provided technical assistance to the Bureau of Forest Development, Ministry of Natural Resources.	Ford	27,000	1985 - 1986
<i>Rainfed Resources Development, Package II, Bicol Farming Systems</i> Assisting the government of the Philippines to develop institutional capabilities and policy frameworks to support community-based approaches to land and resource management in rainfed areas.	USAID	1,602,000	1984 - 1987

Project/Purpose	Funding Source	Amount (U.S. Dollars)	Duration
Sri Lanka			
<i>Food Policy Training</i> Provided master's-degree fellowships at the University of Philippines at Los Banos for two agricultural economists to relate research findings to agricultural policy.	Skaggs	7,000	1984 - 1986
Swaziland			
<i>Cropping Systems</i> Provided two short-term consultants—an animal-production specialist and a livestock socioeconomics specialist—to examine the role of livestock in cropping systems research. Primary contractor: Pennsylvania State University.	USAID	31,000	1986
Uganda			
<i>Manpower for Agricultural Development</i> Assisting in rehabilitating, redirecting, and retraining Uganda's agricultural manpower and institutional capability at Makerere University and at a Ministry of Agriculture research station. Primary contractor: Ohio State University Research Foundation. (Project cancelled early in 1986 because of the political situation that required the evacuation of Winrock personnel.)	USAID	504,000	1985 - 1988
United States			
<i>Alternative Farm Systems in the Southern United States</i> Performed quantitative analysis on how changes in forage/livestock production methods and associated socioeconomic and ecological factors affect farm structure and function.	USDA Winrock	90,000	1983 - 1986
<i>Analysis of Resource Factors of Forage Systems for Livestock in the United States</i> Providing quantitative information to be used in formulating grazing-land research, education, and land-management policies and programs that can ensure adequate future supplies of forage.	USDA Winrock	57,000	1980 - 1987
<i>Beef and Sheep Improvement</i> Assisting in the genetic-improvement programs of the cattle and sheep industries of Arkansas and the United States.	Winrock	29,000	1983 - continuing
<i>Central States Dairy Goat Marketing Cooperative</i> Providing dairy goat producers in Arkansas, Missouri, Oklahoma, Louisiana, and Texas with technical assistance to expand marketing opportunities and to improve herd productivity and standards.	Winrock	20,000	1980 - continuing
<i>Farming Systems Support</i> Providing technical assistance, training, networking, and research to farming systems projects.	USAID Winrock	18,000	1983 - 1987
<i>Goat and Sheep Marketing Strategy</i> Performed a situation analysis and made projections concerning goat and sheep production, processing, and marketing in the southeastern United States.	CSDGMC Pel-Freez WRF	13,000	1985 - 1986
<i>Grazing Lands Forum</i> Participating in and providing limited administrative support for the Grazing Lands Forum, an educationally oriented organization of representatives of 30 public and private agencies interested in grazing lands stewardship.	Winrock	50,000	1983 - continuing
<i>Multispecies Grazing</i> Increasing understanding of the benefits of multispecies enterprises to optimize biological and economic efficiency in range and pasture use.	Winrock	16,000	1985 - 1987
<i>Southern Forage/Tree Interaction Study</i> Promoting agroforestry production in central Arkansas to improve conservation and profitability of hill-land sites by identifying management inputs for establishing pine seedlings in a perennial grass pasture.	Winrock	65,000	1981 - 1989

1986 Project List (continued)

Project/Purpose	Funding Source	Amount (U.S. Dollars)	Duration
<p><i>Southern Forest Range Project</i> Used agroecosystem models to evaluate opportunities for agroforestry systems involving forage-livestock production in the southern United States.</p>	USDA	9,000	1979 - 1986
<p><i>U.S. Program Development</i> Developing and implementing a long-range prospectus for Winrock's U.S. program with emphasis on Arkansas and the southeastern United States. Includes the following studies: <i>The Structure of Arkansas Agriculture: A Taxonomy; An Agricultural and Socioeconomic Perspective of Arkansas by Counties and Regions; Production, Marketing, and Transportation of Grain Sorghum in Arkansas;</i> and a study of Arkansas farm-income instability.</p>	Winrock	105,000	1986 - continuing



1986 Fellows

Argentina

Colorado State University (USA)

Julio C. Bissio, range management, M.S.

Daniel Humberto Iglesias, range science, M.S.

Juan Carlos Manchado,
agricultural economics, M.S.

Ricardo Luis Sager, animal pathology, M.S.

Andres H. Sipowicz, range management, Ph.D.

Maria Zacagnini-Balyk, wildlife biology, M.S.

Columbia University (USA)

Gerardo Kaplan, microbiology, postdoctoral

Cornell University (USA)

Carlos N. Corbellini, veterinary science, Ph.D.

Carlos Alberto Gonzalez,
agricultural economics, M.S.

Camelo Andres Lopez,
vegetable production, Ph.D.

Hugo Mendez-Casariogo,
international agricultural and
rural development, M.P.S.

Florida State University (USA)

Graciela Cordone de Bruniard,
vegetable production/extension, M.S.

Sergio Garran, plant pathology, M.S.

Alexis Pourrain,
extension/animal production, Ph.D.

Georgia State University (USA)

Jose Pedro DeBattista, forage improvement, M.S.

Iowa State University (USA)

Raul Antonio Almeida,
vegetable microbiology, M.S.

Victor Brescia, statistics, M.S.

Guillermo Eyherabide,
vegetable improvement, Ph.D.

Martin Grondona, statistics, Ph.D.

Juan Carlos Somigliana,
vegetable improvement, M.S.

Juan Carlos Suarez, agronomy, Ph.D.

Gustavo Zielinski, veterinary medicine, M.S.

*Institut Agronomique Mediterranee
de Montpellier (France)*

Carlos Fernandez Alsina,
rural development, M.Sc.

Jorge Caviglia, agricultural economics, M.Sc.

Mario Lopez, agricultural economics, M.Sc.

Antonio Tanzariello, rural development, M.Sc.

Institut National de Recherche Agronomique (France)

Juan Jose De Battista,
vegetable production, diploma

Edgardo R. Guevara, bioclimatology, Ph.D.

Roberto Lecuona, biology, Ph.D.

Graciela Magrin, bioclimatology, Ph.D.

Arturo Mazzanti, forage plant ecology, Ph.D.

Pedro Rimieri, forage plants, Ph.D.

Louisiana State University (USA)

Carlos Salomon Eddi, veterinary science, M.S.

Ricardo Gabriel Novick,
cotton improvement, M.S.

Michigan State University (USA)

Elena A. Hidalgo de Avila, extension, M.S.

Mississippi State University (USA)

Christiano Casini, seed technology, M.S.

Eduardo E. Martello, agronomy, M.S.

Guillermo W. Videla, entomology, M.S.

Montana State University (USA)

Rodolfo Agostinho, agricultural extension, M.S.

New Mexico State University (USA)

David Lee Anderson, range ecology, Ph.D.

Juan D. Avila, veterinary science, M.S.

Alberto R. Baez-Kohn, animal production, M.S.

Juan Carlos Echeverria, entomology, M.S.

Oscar Nestor Ruffini,
agricultural extension, education, M.S.

North Carolina State University (USA)

Cecilia Bainchi, microbiology, M.S.

Ricardo Jose Melgar, soil science, M.S.

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Lyle C. Sikka*, Potato Specialist

Brazil

Small Ruminant - Collaborative Research Support Program Economics Project

Greg Baker, Agricultural Economist

Burma

Burma Agricultural Research and Development Project

A. Hugo Manzano, Research Administrator/Chief of Party (transferred from Bangladesh Agricultural Research Project)

Lloyd Johnson, Research Station Development Specialist

China

Strengthening Agricultural Economics

James E. Nickum, Program Leader/Economist

Cote d'Ivoire

Support for Training and Research in the Rural Social Sciences

Paul T. Perrault, Program Leader/Agricultural Economist

Egypt

Data Collection and Analysis Project

Mohamed K. Hindy*, Project Advisor

Egypt National Agricultural Research Project

Willis L. McCuiston, Specialist in Interdisciplinary Research Management

Haiti

National Goat Production Improvement Project

Edwin W. Geers, Field Project Leader

Sara Guthrie, Agricultural Economist

Manuel Sanchez, Animal Scientist

Haiti Agricultural Support II Project

Michael K. Bertelsen, Agricultural Economist

Amal K. Chatterjee, Farming Systems Agronomist

Quentin Grafton, Agricultural Economist

Honduras

Small Farmer/Livestock Improvement Project (Fondo Ganadero)

Carlos A. Valderrama, Chief of Party/Long-term Advisor

India

Management Support Services for Agriculture Project

Guy B. Baird, India Coordinator

Indonesia

Agricultural Planning Project

Douglas D. Hedley, Chief of Party

C. Geoffrey Swenson, Agricultural Economist (transferred from Indonesia National Agricultural Research Project)

Stanley Wood, Computer Applications Specialist

National Agricultural Research Project—II

Ralph H. Retzlaff, Project Supervisor

Emiterio V. Aggasid, Civil Works Specialist

Christopher Bennett*, Coconut Pathologist

Kee-Chai Chong, Research Specialist, Fisheries/Aquaculture Economics

Ernesto B. Farre, Financial Specialist

David G. Hill*, Scientific Information Specialist

Paul Mundy*, Associate Editor, Research Communication

P. S. Srinivasan, Administrative Specialist (transferred from Sumatra Agricultural Research Project)

Clive D. Topper*, Cotton Entomologist

Program at Brastajaya University

Frederick C. Roche*, Agricultural Economist

Sumatra Agricultural Research Project

Ernest W. Nunn, Farm Development Specialist

Rural Social Sciences Support

Bruce Glassburner*, Agricultural Economist

Kenya

Kiboko Range Research Project

Richard Hansen*, Chief of Party

Zahoor Malik*, Maintenance Engineer

Small Ruminant - Collaborative Research Support Program Dairy Goat Systems and Economics Project

Adrian W. Mukhebi, Agricultural Economist (transferred from Kenya Kiboko Range Research Project)

J. F. Moses Onim, Agronomist

Patterson P. Semenyé, Animal Scientist

University of Nairobi

John Waelti, Visiting Professor

Nepal

Agricultural Research and Production Project (began in October)

A. John De Boer, Chief of Party (transferred from headquarters)

S. S. Bal, Seed Production Specialist/Deputy Team Leader

Daniel L. Galt, Socio-economist

Richard C. Hawkins, Farming Systems Research Agronomist

Carl N. Hittle*, Minor Crops Agronomist

David A. Reed, Agroforestry Research Specialist

William Schillinger, Production Agronomist

Manpower Development and Strengthening Institutional Capacity

John C. Cool, Program Leader/Anthropologist

Michael B. Wallace, Agricultural Economist

Pakistan

Forestry Planning and Development Project

Dean Current*, Farm and Energy Forester

Michael Dove, Rural Sociologist/Anthropologist

William J. Hart, Farm Forestry Outreach Specialist

Kenneth L. McNabb, Farm Forestry Research Advisor

Management of Agricultural Research and Technology Project

Bill C. Wright, Research Planning and Management Advisor/Chief of Party

Theodore Buila, Agricultural Training Advisor

Murray D. Dawson, Farming Systems Research Advisor

Cordell Hatch, Information Transfer Advisor

Takumi Izuno, Provincial Research Operations and Support Advisor

Peru

Small Ruminant - Collaborative Research Support Program Economics Project

Nestor Gutierrez, Agricultural Economist

Philippines

AID Policies Project

Anthony M. Tang, Program Leader/Visiting Professor

Economic Analysis of Livestock On-farm Trials

Pervaiz Amir, Agricultural Economist

Rainfed Resources Development Project - Bicol Farming Systems

Inocencio C. Bolo, Farming Systems Specialist

St. Lucia

Caribbean Agricultural Research and Development Institute (CARDI) Farming Systems Research and Development Project

Robert D. Hart, Program Officer (transferred to headquarters)

Thailand

Forestry/Fuelwood Research and Development Project

William F. Hyde, Land and Forestry Management Network Advisor

Gerard Rixhon, Coordinator, Regional Training and Research Programs

Uganda

Manpower for Agricultural Development Project

James Jacks*, Farm Management Specialist

1986 Technical Publications And Papers

- Amir, P., M. M. Aslam, and M. R. Aktar. 1986. Crop yield maximization in Pakistan: Some conceptual and operational considerations. *Sci. Tech. and Development* 5(5):13-20.
- Amir, P. and H. C. Knipscheer. 1986. Resource use among rice farmers in Pakistan: A production function analysis. *Applied Agric. Res.* 1(2):152-158.
- Bahadur, K. C. R. 1986. Land reform: Progress and prospects in Nepal. Research report series no. 2. Government of Nepal/U.S. Agency for International Development/German Agency for Technical Cooperation/Winrock International, Kathmandu, Nepal. 25 pp.
- Baker, Greg and Jose de Souza Neto. 1986. Characteristics, constraints, and technology recommendations for the smallholders at Saco do Belem. In: Goats and Sheep in Northeast Brazil: Proceedings of the first workshop of the Small Ruminant Collaborative Research Support Group. Empresa Brasileira de Pesquisa Agropecuaria/Small Ruminant Collaborative Research Support Program, Brasilia, Brazil. 447 pp.
- Bal, S. S. and B. P. Parajuli. 1986. Improving the production and supply of seeds in the eastern hills of Nepal. Agricultural Research and Production Project miscellaneous report no. 1. Ministry of Agriculture, Kathmandu, Nepal.
- Bal, S. S. and G. R. Rajbhandary. 1986. Plan for breeder/foundation seed improvement at BAF, Bhaïrahwa. Agricultural Research and Production Project miscellaneous report no. 4. Ministry of Agriculture, Kathmandu, Nepal.
- Bal, S. S. and G. R. Rajbhandary. 1986. Plan for breeder/foundation seed improvement at RAS, Rampur. Agricultural Research and Production Project miscellaneous report no. 3. Ministry of Agriculture, Kathmandu, Nepal.
- Bal, S. S. and K. L. Rajbhandary. 1986. A model for seed production in remote areas of Nepal. Agricultural Research and Production Project consultancy report no. 3. Ministry of Agriculture, Kathmandu, Nepal.
- Bertelsen, M. K., E. Dupont, and R. Swanson. 1986. Preliminary results of the pilot agricultural survey in the Departement du Sud. Agricultural Development Support II Project report no. 15. University of Arkansas, Fayetteville/Winrock International/Haitian Ministry of Agriculture, Fayetteville, Arkansas, U.S.A.
- Bhandari, B., N. Kunwar, and B. B. S. Dongol. 1986. Rural poverty and the poor in Nepal: Comparative case study of a hill and Tarai village. Rural poverty research paper series no. 4. Government of Nepal/U.S. Agency for International Development/German Agency for Technical Cooperation/Winrock International, Kathmandu, Nepal. 19 pp.
- Burzlaff, D. F., W. L. Fuglie, M. O. Mahmoud, G. W. McLean, and R. S. Temple. 1986. Western Sudan Agricultural Research Project: An evaluation with recommendations. Prepared for U.S. Agency for International Development-Sudan. Winrock International, Morrilton, Arkansas, U.S.A. 75 pp.
- Child, R. D. 1986. Final report of arid and semi-arid training of trainers workshop, May 27-June 14, 1985, Harare, Zimbabwe. Winrock International, Morrilton, Arkansas, U.S.A. 317 pp.
- Child, R. D. 1986. Final report of the workshop on planning and management of development in the humid tropics, Feb. 3-21, 1986, Alajuela, Costa Rica. Winrock International, Morrilton, Arkansas, U.S.A. 403 pp.
- Dickey, J. R. and Q. M. E. Huque. 1986. Status of the Bangladesh livestock industry in relation to fodder supply and to consumption of animal products. Bangladesh Agricultural Research Project, Phase II. Bangladesh Agricultural Research Council/Winrock International, Dhaka, Bangladesh. 35 pp.
- Dove, M. R. 1986. The ideology of agricultural development in Indonesia. In: C. MacAndrews (ed.). Central government and local development in Indonesia. Oxford University Press, Kuala Lumpur, Malaysia. pp. 221-247.
- Dove, M. R. 1986. Peasant versus government perception and use of the environment: A case study of Banjarese ecology and river basin development in south Kalimantan. *Journal of Southeast Asian Studies* 17(1):113-136.
- Dove, M. R. 1986. Plantation development in west Kalimantan II: The perceptions of the indigenous population. *Borneo Research Bulletin* 18(1):3-27.
- Dove, M. R. 1986. The practical reason of weeds in Indonesia: Peasant versus state views of *Imperata* and *Eupatorium*. *Human Ecology* 14(2):163-190.
- Florez, A., A. Carrasco, N. Gutierrez, and O. Carhuamaca. 1986. Demepeno biologico-economico de la asociacion rye grass-trebol para engorde de ovinos en la Sierra del Peru. Series reportes tecnicos no. 82. Instituto Nacional de Investigacion y Promocion Agropecuaria, Lima. 47 pp.
- Freeman, W. H. 1986. Research planning and management. Agricultural Research and Production Project consultancy report no. 4. Ministry of Agriculture, Kathmandu, Nepal.
- Freeman, W. H. 1986. Working paper for the operation of a national agricultural research system in Nepal. Agricultural Research and Production Project consultancy report no. 5. Ministry of Agriculture, Kathmandu, Nepal. 88 pp.
- Galt, D. L. and S. B. Mathema. 1986. Farmer participation in farming systems research. SEKED report no. 3. Khumaltar, Nepal. 20 pp.
- Gamble, W. K., R. L. Blumberg, V. C. Johnson, and N. S. Raun. 1986. A review of the impact of AID assistance to three Nigerian universities. Winrock International, Morrilton, Arkansas, U.S.A. 32 pp. plus appendixes.
- Getz, W. R. and B. E. Granden. 1986. Livestock in Swaziland cropping systems research and extension training. Consultants' report prepared for the Kingdom of Swaziland, Ministry of Agriculture and Cooperatives, Pennsylvania State University, and Tennessee State University. Winrock International, Morrilton, Arkansas, U.S.A. 90 pp.
- Gillham, F. E. M. 1986. A review of cotton production research in Indonesia. A supplementary report to "Evaluation of the industrial crop research program of AARD." Agency for Agricultural Research and Development, Bogor, Indonesia.
- Greene, B. A. 1986. Analysis of annual income for 45 farm families. Hathazari CSRS, 1981/82. BARC paper no. 13. Bangladesh Agricultural Research Council/Winrock International, Dhaka, Bangladesh. 31 pp.
- Gunderson, R. O. and E. Ospina. 1986. The structure of Arkansas agriculture: A taxonomy. Winrock International, Morrilton, Arkansas, U.S.A. 126 pp.
- Gutierrez-Aleman, N., A. J. DeBoer, and R. D. Hart. 1986. A bioeconomic model of small-ruminant production in the semi-arid tropics of the northeast region of Brazil: Part 1 — Model description and components. *Agricultural Systems* 19(1):55-66.
- Gutierrez-Aleman, N., A. J. DeBoer, and E. W. Kehrberg. 1986. A bioeconomic model of small-ruminant production in the semi-arid tropics of the northeast region of Brazil: Part 2 — Linear programming applications and results. *Agricultural Systems* 19(3):159-187.
- Hamal, K. B. and M. P. Upadhyay. 1986. Rural savings mobilization in Nepal. Research and planning paper series no. 1. Government of Nepal/U.S. Agency for International Development/German Agency for Technical Cooperation/Winrock International, Kathmandu, Nepal. 27 pp.
- Hamid, M. A. and A. K. Kaul. 1986. Lathyrism in Bangladesh. Rajshahi University/Ford Foundation, Dhaka, Bangladesh. 126 pp.
- Hansen, R. M., B. M. Woiw, and R. D. Child (eds.). 1986. Range development and research in Kenya. Proceedings of a conference, April 1-5, 1986. Winrock International, Morrilton, Arkansas, U.S.A. 474 pp.
- Hart, T. G. 1986. Planning a maize research and production strategy for Bangladesh. A consultants report. Winrock International, Dhaka, Bangladesh. 124 pp.
- Hunter, A. 1986. Soil fertility analytical services and research for Bangladesh. Bangladesh Agricultural Research Project, Phase II. SM-4-86. Bangladesh Agricultural Research Council, Dhaka, Bangladesh. 11 pp.
- Hutchcroft, T. (ed.). 1986. Management of human resources in agricultural research. Report of the international workshop, Dhaka, Bangladesh, March 3-5, 1986. Bangladesh Agricultural Research Council/International Service for National Agricultural Research. Winrock International, Dhaka, Bangladesh. 145 pp.
- Islam, F. (ed.). 1986. Research report of farming systems research project, Kalikapur, Ishurdi. Bangladesh Agricultural Research Council/Winrock International, Dhaka, Bangladesh. 224 pp.
- Islam, F. and R. K. Saha. 1986. Fertilizer utilization pattern for wheat cultivation at farming systems research site, Kalikapur, Ishurdi, Pabna. FSR site report no. 6. Bangladesh Agricultural Research Council/Winrock International, Dhaka, Bangladesh. 23 pp.
- Islam, T. M. T. and A. K. Kaul. 1986. Prospects of maize in Bangladesh. Food and Agriculture Organization of the United Nations/United Nations Development Programme, Rome, Italy. 126 pp.
- Jacobs, L. 1986. Environmentally sound small-scale livestock projects—Guidelines for planning. Codel, Inc./Heifer Project International/Winrock International. VITA Publications Services, Arlington, Virginia, U.S.A. 149 pp.
- Katwal, B. B. 1986. Wages and welfare: The case of attached vs. casual labor in the Nepal Tarai. Research paper series no. 31. Government of Nepal/U.S. Agency for International Development/German Agency for Technical Cooperation/Winrock International, Kathmandu, Nepal. 17 pp.

- Kaul, A. K. and D. L. Combes. 1986. Lathyrus and lathyrism. Third World Medical Research Foundation, New York, U.S.A. 334 pp.
- Kaul, A. K. and M. I. Das. 1986. Oilseeds in Bangladesh. Ministry of Agriculture, Dhaka, Bangladesh. 323 pp.
- Kaul, A. K. and T. M. T. Islam. 1986. Agronomic aspects of pulses, maize and sorghum. Winrock International/Bangladesh Agricultural Research Council, Dhaka, Bangladesh. 90 pp.
- Kaul, A. K., M. R. I. Khan, and K. M. Munir. 1986. Rice quality: A survey of Bangladesh germplasm. Bangladesh Rice Research Institute, Dhaka, Bangladesh. 177 pp.
- Knipscheer, H. C. and P. Amir. 1986. Feasibility of sheep-rubber systems in Indonesia. A linear programming analysis of alternative technologies. Journal of Agroforestry.
- Lacsina, R. Q., B. R. Adhikary, S. L. Shrestha, B. P. Upadhyay, and S. C. Gurung. 1986. Report on the training course in agricultural research design and methods. National Agricultural Research and Services Center report no. 1. Ministry of Agriculture, Kathmandu, Nepal.
- Levine, J. and M. Sabrani (eds.). 1986. Proceedings of the workshop on farming systems research and development. Central Research Institute for Animal Sciences, Ciawi (Bogor), March 21, 1985. Agency for Agricultural Research and Development/Winrock International, Bogor, Indonesia. 137 pp.
- Mackie, C. 1986. Report on agroforestry and silvopasture research in Java. Agency for Agricultural Research and Development/Winrock International, Jakarta, Indonesia. 31 pp.
- MacMillan, S. (ed.). 1986. Wildlife/livestock interfaces on rangelands. Proceedings of a conference, Taita Hills Lodge, Kenya, April 22-25, 1985. Winrock International, Morrilton, Arkansas, U.S.A. 211 pp.
- Maner, J. H. and K. O. Rachie. 1986. A brief assessment of agricultural research in Jamaica and recommendations of approaches and strategies for improvement. Winrock International, Morrilton, Arkansas, U.S.A. 44 pp.
- Mathema, S. B., D. L. Galt, K. C. Krishna, R. B. Shrestha, A. R. Sharma, V. N. Upraity, and N. L. Vaidya. 1986. Report on the process of the group survey and on-farm trial design activity, Naldung Village Panchayat, Lavre District (Central Development Region). SERED report no. 2. Government of Nepal, Khumaltar. 36 pp.
- McClung, A. C. 1986. Opportunities for consultants in international agricultural development. Hort. Sci. 21(3).
- Miller, M. E. and D. Felton (eds.). Research and development of vegetables in the tropics. Summary report of a conference, January 9-12, 1986. Winrock International, Morrilton, Arkansas, U.S.A. 88 pp.
- Ministry of Agriculture and Food. 1986. Compilation of research papers presented during the integrated review and planning workshop on regional R & D projects, June 18-21, 1986. Ministry of Agriculture and Food, Camarines Sur, Philippines. 240 pp.
- Mukhebi, A. W., F. Ruvuna, M. Onim, P. Semenyi, F. Rurangirwa, and W. T. Conelly. 1986. SR-CRSP research highlights, 1980-1985 (Maseno Research Station). Ministry of Agriculture and Livestock Development, Maseno, Kenya. 68 pp.
- Niu, R. and P. H. Calkins. 1986. Towards an agricultural economy for China in a new age: Progress, problems, response, and prospects. American Journal of Agricultural Economics 68(2):445-450
- Nygaard, D. F. and P. L. Pellett (eds.). Dry area agriculture, food science and human nutrition. Proceedings of a workshop, University of Aleppo, Syria, Feb. 21-25, 1982. Pergamon Press, New York, New York, U.S.A. 372 pp.
- Oltjen, R. R. and F. H. Baker (eds.). 1986. An assessment of the role of meat in diet/health issues. Proceedings of a symposium held during the 77th annual meeting of the American Society of Animal Science. Journal of Animal Science 62(Suppl. 1). 100 pp.
- O'Rourke, J. T. (ed.). 1986. Proceedings of the 1986 International Rangeland Development Symposium. International Affairs Committee, Society for Range Management/Winrock International, Morrilton, Arkansas, U.S.A. 146 pp.
- Pokarel, B. N. and G. P. Shivakoti. 1986. Impact of development efforts on agricultural wage labor. Rural poverty research paper series no. 1. Government of Nepal/U.S. Agency for International Development/German Agency for Technical Cooperation/Winrock International, Kathmandu, Nepal. 15 pp.
- Portch, S. and M. S. Islam. 1986. Sulphur: A major constraint to high yields in Bangladesh. Sulphur in Agriculture 10:14-15.
- Rawal, T. 1986. Transport cost minimization for Nepal's subsidized foodgrain program: A proposed model. Research and planning paper series no. 5. Government of Nepal/U.S. Agency for International Development/German Agency for Technical Cooperation/Winrock International, Kathmandu, Nepal. 19 pp.
- Reddy, L. J. and A. K. Kaul. 1986. Status and prospects of groundnut in Bangladesh. Bangladesh Agricultural Research Council, Dhaka. 167 pp.
- Replogle, J. A. 1986. Measuring and control devices for irrigation and drainage systems in Bangladesh. Consultant's report. Bangladesh Agricultural Research Council/Winrock International, Dhaka, Bangladesh. 33 pp.
- Saha, R. K., M. W. A. Shah, and M. F. Islam. 1986. Preliminary analysis of existing livestock production and utilization. FSR site report no. 5. Bangladesh Agricultural Research Council/Winrock International, Dhaka, Bangladesh. 11 pp.
- Sapkota, P. R. 1986. Crop productivity in Nepal: Spatial and temporal dimensions. Research and planning paper series no. 4. Government of Nepal/U.S. Agency for International Development/German Agency for Technical Cooperation/International Development Research Centre/Winrock International, Kathmandu, Nepal. 24 pp.
- Segerson, E. C., F. C. Gunsett, and W. R. Getz. 1986. Selenium-vitamin E supplementation and production efficiency in ewes marginally deficient in selenium. Livestock Production Science 14:149-159.
- Sharma, M. 1986. Factors affecting the Tarai paddy market: Pricing policy implications. Government of Nepal/U.S. Agency for International Development/German Agency for Technical Cooperation/International Development Research Centre/Winrock International, Kathmandu, Nepal. 17 pp.
- Sherchand, Kishore, T. B. Shrestha, and Kenneth O. Rachie. 1986. Hill crop improvement program in Nepal. Agricultural Research and Production Project consultancy report no. 6. Ministry of Agriculture, Kathmandu, Nepal.
- Shrestha, R. B. 1986. Socioeconomic factors leading to deforestation in Nepal. Research and planning paper series no. 2. Government of Nepal/U.S. Agency for International Development/German Agency for Technical Cooperation/International Development Research Centre/Winrock International, Kathmandu, Nepal. 23 pp.
- Shrestha, R. B., D. L. Galt, S. B. Mathema, K. C. Krishna, P. B. Heinzen, A. R. Sharma, V. N. Uprety, M. L. Baidya, and B. C. Gupta. 1986. Baseline survey report of Naldung Village Panchayat Kavre District. SERED report no. 4. Government of Nepal, Khumaltar. 37 pp.
- Shrestha, R. B., K. C. Krishna, D. L. Galt, and A. R. Sharma. 1986. Baseline survey summary report of Baglung, Myagdi and Parbat Districts of Nepal. SERED report no. 1. Government of Nepal, Khumaltar. 16 pp.
- Shrestha, R. B., U. B. Shrestha, and U. Pradhan. 1986. Job environment and job consciousness of agricultural graduates. Research paper series no. 7. Government of Nepal/U.S. Agency for International Development/German Agency for Technical Cooperation/Winrock International, Kathmandu, Nepal. 22 pp.
- Siwi, B. H. and P. Mundy. 1986. Management of agricultural research in relation to extension in Indonesia. Agency for Agricultural Research and Development/Winrock International, Bogor, Indonesia. 24 pp.
- Souza Neto, Jose de and Greg Baker. 1986. Sistemas de manejo e produção pecuária em uso no Nordeste: O caso de caprinos leiteiros. In: Goats and Sheep in Northeast Brazil: Proceedings of the first workshop of the Small Ruminant Collaborative Research Support Group. Empresa Brasileira de Pesquisa Agropecuária/Small Ruminant Collaborative Research Support Program, Brasília, Brazil. 447 pp.
- Suvedi, M. P. 1986. Poorest of the poor: A comparative study of rural poverty in two villages of Nepal. Rural poverty research paper series no. 3. Government of Nepal/U.S. Agency for International Development/German Agency for Technical Cooperation/International Development Research Centre/Winrock International, Kathmandu, Nepal. 23 pp.
- Syam, M. and P. Mundy. 1986. Agricultural research, extension and education in Indonesia. Agency for Agricultural Research and Development/Winrock International, Bogor, Indonesia. 63 pp.
- Tillman, A. D., H. E. Ridenour, and W. R. Getz. 1986. A guide to the feeding and nutrition of ruminants in the tropics. Winrock International, Morrilton, Arkansas, U.S.A. 380 pp.
- Tinsina, J. and M. Suvedi. 1986. Contribution of cropping systems program research and extension to the rural poor: A case study of Ratnanagar cropping systems site. Rural poverty research paper series no. 2. Government of Nepal/U.S. Agency for International Development/German Agency for Technical Cooperation/Winrock International, Kathmandu, Nepal. 24 pp.

1986 Technical Publications And Papers (continued)

- Tulachan, P. M. 1986. Socio-economic characteristics of livestock raising in Nepal. Research report series no. 1. Government of Nepal/U.S. Agency for International Development/German Agency for Technical Cooperation/Winrock International, Kathmandu, Nepal. 27 pp.
- University of Arkansas, Winrock International, and Ministry of Agriculture. 1986. Initial digital resource data base for Haiti. 1986. Report no. 17. University of Arkansas, Fayetteville/Winrock International/ Haitian Ministry of Agriculture, Fayetteville, Arkansas, U.S.A.
- Veletz, N. M. 1986. La crianza de cabras y ovejas en el tropico. Escuela Agrícola Panamericana/Winrock International, Morrilton, Arkansas, U.S.A. 261 pp.
- Wahid, P. 1986. Rainfed resource development project in Bicol region, the Republic of Philippines. Consultant's report on spice crops. Regional Integrated Agricultural Research System/Winrock International, Camarines Sur, Philippines. 38 pp.
- Wallace, B. and R. V. Kemper. 1986. Research in agricultural economics and social sciences. Bangladesh Agricultural Research Project, Phase II. ESS-3-86. Bangladesh Agricultural Research Council/Winrock International, Dhaka, Bangladesh. 27 pp.
- Wallace, B. J. and R. V. Kemper. 1986. Farming systems and the extended community. Bangladesh Agricultural Research Project, Phase II. ESS-11-86. Bangladesh Agricultural Research Council/Winrock International, Dhaka, Bangladesh. 169 pp.
- Wallace, M. B. 1986. Fertilizer price policy in Nepal. Research and planning paper series no. 6. Government of Nepal/U.S. Agency for International Development/German Agency for Technical Cooperation/International Development Research Centre/Winrock International, Kathmandu, Nepal. 28 pp.
- Wallace, M. B. (ed.). 1986. Strengthening institutional capacity in the food and agricultural sector in Nepal. Government of Nepal/U.S. Agency for International Development/German Agency for Technical Cooperation/Winrock International, Kathmandu, Nepal. 22 pp.
- Walter, M. F. 1986. Role of ponds for irrigation in farming systems in Bangladesh. Consultancy report submitted to Bangladesh Agricultural Research Council and Winrock International, Dhaka, Bangladesh. 68 pp.
- Widjono, A. 1986. Perception of superiors' openness to receive upward information in an Indonesian food crops agricultural development organization. Master's thesis. University of Wisconsin, Madison, Wisconsin, U.S.A. 99 pp.
- Winrock International. 1986. A review of the livestock sector in the Republic of Indonesia. Volume I: Main report. 442 pp. Volume II: Appendices. 239 pp. Prepared for the Asian Development Bank and the Republic of Indonesia. Winrock International, Morrilton, Arkansas, U.S.A.
- Woodward, A. M. Development of computerized facilities at NALDOC. Bangladesh Agricultural Research Project, Phase II. TSS-10-86. Bangladesh Agricultural Research Council/Winrock International, Dhaka, Bangladesh. 34 pp.
- Wymore, I. F. 1986. Irrigation scheduling: State of the art. Bangladesh Agricultural Research Project, Phase II. WM-5-86. Bangladesh Agricultural Research Council/Winrock International, Dhaka, Bangladesh. 52 pp.
- Yamanishi, T. 1986. Tea report to AARD/Winrock International. Research Institute for Tea & Cinchona, Bandung, Indonesia. 35 pp.
- Yazman, J. A. 1986. Livestock production in the midhill region of Nepal. A suggested work plan for the livestock component of the Agricultural Research and Production Program (ARPP). Nepal. Winrock International, Morrilton, Arkansas, U.S.A. 52 pp.
- Young, K. B. and G. L. Cramer. 1986. The centrally planned countries livestock product and feed grain systems. In: J. R. Jones (ed.). East-West Agricultural Trade. Westview Special Studies in International Economics and Business. Westview Press, Boulder, Colorado, U.S.A. pp. 111-152.
- Young, K. B. and G. L. Cramer. 1986. The impact of livestock feed demand in centrally planned countries on grain and oilseed imports. *Agricultural Systems* 21:69-82.

Presentations

Amir, P. 1986. Computer aided management and project design in agricultural research organizations in developing countries. Paper prepared for the seminar-workshop on the use of computers in agriculture and related fields, National University of Singapore, April 21-25, 1986. 14 pp.

Amir, P. and M. Carlos. 1986. Pre-screening livestock technology based on economic profitability. Paper prepared for the crop-livestock workshop, Bangkok, Thailand, July 7-11, 1986. 14 pp.

Creel, B. and Greg Baker. 1986. Computer applications in administering examinations and keeping gradebooks. Paper presented at the American Agricultural Economics Association teaching workshop, Reno, Nevada, U.S.A., July 25-27, 1986. 10 pp.

Gunderson, R. O. and E. Ospina. 1986. An investigation into the relationship between farm structure and rural areas. Paper presented at the American Agricultural Economics Association meeting, Reno, Nevada, U.S.A. July 27-30, 1986. 11 pp.

Havener, R. D. 1986. U.S. development assistance: Yesterday, today, and tomorrow. Paper presented at the 22nd annual conference of the Association of United States University Directors of International Agricultural Programs, July 1986, Colorado State University, Ft. Collins, Colorado, U.S.A. 8 pp.

Havener, R. D. and C. R. Dowsell. 1986. Food production in the Third World: Implications for U.S. agriculture. Paper presented at the Food and Agriculture Committee meeting at Winrock International, Morrilton, Arkansas, U.S.A. October 1-3, 1986. 12 pp.

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OCIAC Update. Newsletter for international agricultural communicators: nine issues annually. US\$15 per year in United States, Canada, Europe, Japan, Australia, and international agricultural research centers; no charge to others. Winrock International, Morrilton, Arkansas, U.S.A.

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Assets	December 31 1986
Current assets:	
Cash and temporary cash investments	\$ 1,645,700
Accounts receivable	6,536,300
Interest and dividends receivable	168,600
Prepaid expenses	95,000
Total current assets	8,445,600
Investments, at market value	27,112,700
Investment in real estate (Note 3)	11,500,000
Property and equipment, net	7,321,800
	\$54,380,100
Liabilities and Fund Balance	
Current liabilities:	
Current portion of long-term debt	\$ 45,000
Accounts payable	980,600
Accrued liabilities	917,500
Deferred revenue	1,697,300
Total current liabilities	3,640,400
Long-term debt	65,900
Deferred gain on real estate (Note 3)	11,500,000
Contract advances	239,900
Fund balance	38,933,900
Commitment and contingencies (Note 8)	\$54,380,100

The accompanying notes are an integral part of this statement.

Accountants' Report

To the Board of Directors of
 Winrock International Institute
 for Agricultural Development

In our opinion, the accompanying consolidated balance sheet and the related consolidated statements of revenues and expenses, capital additions and fund balance and of changes in financial position present fairly the financial position of Winrock International Institute for Agricultural Development and its subsidiary at December 31, 1986 and the results of their operations and the changes in their financial position for the year, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year. Our examination of these statements was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

Little Rock, Arkansas
 April 6, 1987

Pricewaterhouse

**Consolidated Statement of Revenues and
Expenses, Capital Additions and Fund Balance**

Winrock International Institute
for Agricultural Development

	Year Ended December 31 1986
Revenues:	
Contracts	\$17,376,500
Contributions	4,833,800
Operating grants	986,600
Interest and dividend income	1,607,500
Other	167,300
Total revenues	24,971,700
Expenses:	
Programs	18,620,600
Program services	842,700
General and administrative	4,586,100
Investment expenses	242,600
Total expenses	24,292,000
Excess of revenue over expenses before capital additions	679,700
Capital additions:	
Increase in carrying value of investments	665,500
Gain on sale of investments	1,462,200
Total capital additions	2,127,700
Excess of revenue over expenses after capital additions	2,807,400
Fund balance at beginning of year	36,126,500
Fund balance at end of year	\$38,933,900

**Consolidated Statement of Changes
in Financial Position**

Winrock International Institute
for Agricultural Development

	Year Ended December 31 1986
Cash was provided by:	
Excess of revenue over expenses before capital additions	\$ 679,700
Capital additions	2,127,700
Excess of revenue over expenses after capital additions	2,807,400
Add (deduct) items not affecting cash:	
Depreciation	418,500
Increase in market value of investments	(665,500)
Increase in accounts receivable	(2,346,800)
Increase in interest and dividends receivable	(20,000)
Decrease in prepaid expenses	213,600
Decrease in investments	702,800
Increase in accounts payable	682,500
Decrease in accrued liabilities	(416,100)
Increase in long-term debt	86,400
Decrease in deferred revenue	(245,000)
Decrease in advances	(22,900)
Cash provided from operations	1,194,900
Cash was used for:	
Purchase of property and equipment	417,100
Reduction of long-term debt	58,500
Total	475,600
Increase in cash	719,300
Cash at beginning of year	926,400
Cash at end of year	\$ 1,645,700

The accompanying notes are an integral part of this statement.

Notes to Consolidated Financial Statements

Winrock International Institute
for Agricultural Development

Note 1—Organization and Summary of Significant Accounting Policies:

Organization

Winrock International Institute for Agricultural Development (Winrock International) was incorporated under the Arkansas Nonprofit Corporation Act on July 1, 1985, and was formed on that date upon the merger of Winrock International Livestock Research and Training Center, International Agricultural Development Service and the Agricultural Development Council.

The basic objective of Winrock International is to help alleviate poverty and world hunger. This objective is supported by Winrock International's administrative offices and staff and by other general supporting services. Services are provided on a contractual basis and generally involve locations outside of the United States.

Consolidation

The consolidated financial statements include the accounts of Winrock International and its wholly-owned subsidiary, IADS Operations, Inc. (IOI), a for-profit corporation which conducts technical assistance in agriculture similar to that of Winrock International. All significant intercompany transactions have been eliminated.

Investments

Investment assets are recorded at fair market value based upon last reported sales prices on or about the last business day of the fiscal year. Changes in unrealized appreciation (depreciation) of investment assets are reflected currently in capital additions (deductions)

Investment transactions are recorded on trade date (date purchased or sold); gains and losses are reflected currently as capital additions (deductions).

Capital additions

Winrock International receives contributions of cash, marketable securities and real estate from the Winthrop Rockefeller Charitable Trust (the Charitable Trust). Winrock International has full rights to any investment income, as defined in the grant instruments, and may market and reinvest the securities; however, it must maintain, available for refund, principal, as defined in the grant instruments. Trustees of the Charitable Trust have retained this right of refund, on demand,

until such time as the trustees are discharged of any further responsibility with respect to the estate of the late Mr. Winthrop Rockefeller. Management does not anticipate being required to return these contributions; accordingly, distributions from the estate have been recognized as capital additions (Note 3).

Contributions of property and equipment from the Charitable Trust and contributions of amounts that must be used to acquire property and equipment are recognized as capital additions.

Revenues

Contract revenues and operating grants are recorded as revenue when the related expenditures are incurred. Advance payments are recorded as deferred revenue until the applicable expenses are incurred. Contributions are considered to be available for general use and are recognized as revenue when granted.

Investment income is recorded as revenue when earned.

Property and equipment

Significant property and equipment purchases are capitalized and recorded at cost. Property and equipment contributed to Winrock International are recorded at estimated fair value at the date of receipt (Note 4).

Depreciation is computed using the straight-line method, based upon estimated useful lives (25 to 40 years for depreciable real property, 3 to 10 years for other property and equipment).

Income taxes

Winrock International is a publicly supported organization exempt from income taxation under Section 501(c)(3) of the Internal Revenue Code. Accordingly, there is no provision for income taxes in the accompanying financial statements.

IOI uses the cash basis of accounting for tax reporting purposes. For financial reporting purposes, IOI uses the accrual basis, and on that basis has a \$248,600 operating loss carryforward at December 31, 1986. The carryforward expires in the year 2001.

Notes to Consolidated Financial Statements
(continued)

Note 2—Investments:

Investments at market value are comprised of the following:

	December 31 1986
Cash equivalents	\$ 2,173,600
Government obligations	2,225,400
Corporate and municipal bonds	4,480,000
Corporate stocks	11,302,700
Investments in limited partnerships and mutual funds	6,931,000
	\$27,112,700

The market value at date of receipt of contributed securities and the cost of purchased securities at December 31, 1986 was \$25,231,200.

Note 3—Investment in Real Estate:

On December 10, 1986, the Charitable Trust conveyed to Winrock International, title to approximately 120 acres of land located in Little Rock, Arkansas (the Riverdale property). Management has estimated the market value of the Riverdale property to be approximately \$11,500,000. Management is actively marketing the Riverdale property and thus has recorded the transfer as an investment in real estate with the capital addition being deferred until the Riverdale property is sold.

The Charitable Trust has an in principal commitment to Winrock International that should the net proceeds from the ultimate sale of the Riverdale property be less than \$11.5 million, the Trust will pay Winrock International the amount necessary to bring such net proceeds to \$11.5 million. The transfer is subject to the same refund provision as explained in Note 1.

Additionally, the Charitable Trust contributed \$300,000 to Winrock International to provide for current operating expenses of the Riverdale property. The Charitable Trust has agreed to provide an additional \$300,000 for such expenses should additional amounts be needed. The amount has been reflected as a contribution.

As a part of the transfer of the Riverdale property, Winrock International entered into an agency agreement with two trustees of the Charitable Trust which provides that the trustees will serve as agents for the sale of the Riverdale property and that each will receive \$15,000 for their services. As of December 31, 1986, no amounts had been paid to the trustees.

Note 4—Property and Equipment:

Property and equipment is comprised of the following:

	December 31 1986
Land	\$ 227,100
Buildings	6,418,100
Equipment	1,370,200
Furniture and fixtures	653,500
	8,668,900
Less accumulated depreciation	(1,347,100)
	\$ 7,321,800

Note 5—Debt:

Long-term debt is comprised of the following:

	December 31 1986
Payable to equipment vendors, payable in monthly instalments of \$6,078 through September 1991 at interest of 8.75% to 17%, secured by equipment purchased	\$110,900
Less portion due within one year	45,000
	\$ 65,900

Note 6—Related Party Transactions:

Winrock International maintains business relationships with other entities indirectly related to Winrock International. Transactions with such related parties consist primarily of investment management and advisory services.

In addition to capital contributions and other grants from the Winthrop Rockefeller Charitable Trust (Notes 3 and 4), Winrock International received revenue from the Charitable Trust aggregating \$920,000 during the period ended December 31, 1986.

Note 7—Employee Benefits:

Winrock International maintains a defined contribution pension plan for all full-time employees. The plan calls for Winrock International to contribute from 5% to 20% of the employees' base salaries to the plan. Employees are fully vested in all contributions. Pension expense for the year ended December 31, 1986 was \$1,053,800.

Note 8—Commitment and Contingencies:

Winrock International maintains a noncancellable operating lease for office space in Washington, D.C., which expires in 1989. Minimum lease payments relating to the lease are as follows:

1987	\$212,300
1988	212,600
1989	70,900

Rental expense for the year ended December 31, 1986 was \$332,600.

Since its inception, Winrock International and a predecessor organization have received contributions of cash, securities and property from the Charitable Trust. As explained in Note 1, trustees of the Charitable Trust retain the right of refund of the contributions and related gains earned by Winrock International on those contributions. At December 31, 1986, such contributions and related gains approximated \$29,533,000.

Costs under U.S. government contracts and grants are subject to audit by the cognizant U.S. government agency. Management believes that cost disallowances, if any, arising from audits of costs charged to government contracts and grants through December 31, 1986 would not have a material effect on the financial position of Winrock International.



The mission of Winrock International Institute for Agricultural Development is to help alleviate hunger and poverty throughout the world by improving agriculture. An autonomous, nonprofit organization, Winrock International is committed to sound agricultural and rural development that makes more and better food, fuel, and fiber available to people; improves their incomes; and provides them more opportunities to lead productive lives. Its basic program themes revolve around two principles: the development of individual potential and the judicious management of renewable resources devoted to agriculture. Winrock International actively seeks support from and partnerships with public and private organizations. It is exempt from federal income tax under Section 501(c)(3) of the United States Internal Revenue Code. It is recognized as a private, voluntary organization by the U.S. Agency for International Development.

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