



A Word From Richard E. Bissell

Assistant Administrator, Bureau for Research & Development

Welcome to the R&D Bureau's new publication, *Innovations*.

The name stems from many new things happening in our bureau, and with this publication we hope to keep you more up-to-date on them. We want to keep you informed about the exciting new inter-sectoral work we're doing in research and field support and about the way we are forging new modes of collaboration with other parts of AID, the university community, the private sector and other countries.

In *Innovations* you'll read about our activities across the development spectrum. We're doing this because we're all becoming more interdependent. The lines between education and agriculture, health and the environment, policymaking and nutrition — as examples — are being breached by the year, if not by the week. And what succeeds in one part of the world may well apply to another. I hope what you read in *Innovations* gives you new insights and perspectives on the complex process of economic development.

Lastly, I solicit your comments about *Innovations* — and contributions of informative articles or topics. *Innovations* is for you, so I ask you to help guide its future issues.

USAID Reorganization in Progress

The U.S. Agency for International Development (USAID) is undergoing the first comprehensive reform since the mid-1970s. The reorganization aims to reallocate management and staff to support new priorities such as Eastern Europe; improve accountability and financial control; simplify program planning and project development; and create Policy, Operations, and Finance & Administration Directorates.

The Bureau of Science and Technology is now the Research and Development (R&D) Bureau, with new responsibility for the Office of International Training, the Office of Women in Development, the Office of the Science Adviser (SCI), and the BIFADEC support staff. The restructured bureau includes a new University Center and a new Office of Research that plans research, supports the Research Advisory Committee, and manages the small research grants program. Continuing in R&D are the offices of Agriculture, Environment and Natural Resources (formerly FENR), Energy and Infrastructure, Education, Economic and Institutional Development (formerly RD), Nutrition, Health, Population, Program, and Management.

How It Works

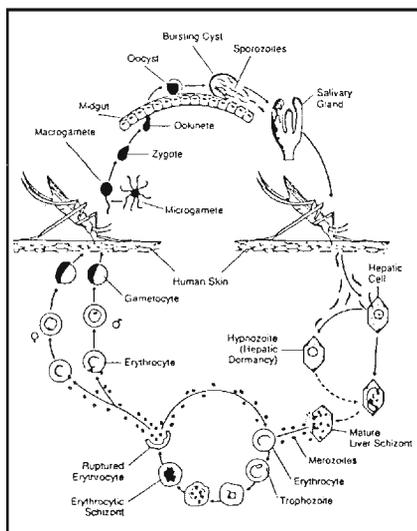
- The reorganization gave R&D an expanded mandate to provide

technical support to the field, replacing some of the field support role of the regional TR offices. To do this with reduced staff, R&D will broaden its field-support projects to reduce the management burdens. ■ R&D is setting up field support and liaison staff in each technical office to provide easy access to assistance or information for regional bureau and mission personnel. ■ Rising buy-ins by regional bureaus and field missions indicate increasing integration of USAID programs, but the *buy-in mechanism has grown unwieldy to administer*. Alternative mechanisms for transferring funds are being studied. ■

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The life cycle of the malaria parasite

Malaria: Institute of Medicine Study, World Conference

For more than 15 years, USAID has pioneered efforts to develop vaccines against malaria—a major cause of illness and death, especially among children, in the world's tropical regions. Despite heroic efforts to eradicate malaria in the 1950s and 1960s, the disease made a dramatic resurgence in the 1970s and 1980s. Recent epidemics have claimed tens of thousands of lives in Africa, and malaria increasingly is viewed as a major barrier to socioeconomic development in many countries.

Although considered a single disease, malaria is really many diseases, each shaped by subtle interactions of biologic, ecologic, social and economic factors.

Malaria is caused by a parasite that lives in humans and in a family of *anopheles* mosquitos. The age-old disease spreads when a mosquito feeds on an infected human, then hosts the parasite until it can be injected into another

human. Today, malaria is outstripping efforts to control it. Drug-resistant strains of malaria are increasing at the same time insecticides are failing to control the species of mosquito that carries malaria. Initially holding the promise of eradication, efforts to control the disease were meeting with dwindling success by 1971.

During the past 15 years, much research has focused on developing vaccines for malaria. Early vaccine-related work in the United States was prompted and supported by USAID, which by the mid-1970s had established a formal malaria vaccine research program. The Agency is still the major source of U.S. malaria vaccine research funding, through which researchers have made critical advances in vaccine development.

Although vaccines against parasites initially were scorned as futile, such vaccines are now thought to be possible in part because people who are naturally ex-

posed to the malaria parasite acquire a partial immunity to the disease over time.

In 1988, in response to findings reported by the General Accounting Office in its audit of USAID's malaria vaccine research activities, USAID revamped its management and oversight of the research program, including creation of advisory and peer review committees and expansion of the project review and competitive procurement systems to include sub-projects. Today, according to Dr. Ann Van Dusen (Director of USAID's Office of Health), the Agency is increasing collaboration with other U.S. government agencies that are also developing malaria vaccines, and encouraging lab researchers to work with field-based counterparts. USAID also publishes a quarterly newsletter, *MVDP upDate*, as a forum for communication among researchers and members of the program's scientific advisory group.

International Agricultural Research Centers Summary of Progress in 1991

- In cooperation with Cornell University, the CIP—or *Centro Internacional de la Papa (International Potato Institute)* in Lima, Peru—developed a new *hairy potato* expected to dramatically reduce insecticide use in developing countries, where the potato receives more pesticide applications than any other food crop. The hairs on stems and leaves were introduced through hybridization with a non-edible relative of the potato. They form a physical and biochemical barrier that traps and kills insects.
- Recognizing that women traditionally plant the rice crop in Asia, the *International Rice Research Institute (IRRI)* in Manila developed an *ultralight rice transplanter* to ease their burden. The new machine, simple and inexpensive, can transplant as much rice in a day as four or five people. After the machine was developed and tested, IRRI released the blueprints free of charge to encourage local manufacturing.
- The Ugandan government is reorganizing its fragmented agricultural research system into a single body, thanks in large part to assistance from the *International Service for National Agricultural Research (ISNAR)* over the past few years. The reorganization has allowed Uganda to qualify for a \$6.6 million "headstart" project funded by the World Bank.

In response to questions regarding USAID's continuing involvement in malaria research and control programs, the Agency asked the Institute of Medicine (IOM) to study and recommend directions for malaria research, prevention and control. The Army Medical Research and Development Command and NIH's National Institute of Allergy and Infectious Diseases (NIAID) helped fund the study, which was expanded to cover the role of all U.S. government agencies in malaria control.

The IOM report, *Malaria: Obstacles and Opportunities*, identified areas that deserve the highest research priority and others that should be considered when the United States supports malaria-control programs. The IOM committee advised the U.S. government agencies involved in malaria research, among other things, to ■ Increase funds to broaden U.S.-funded laboratory and field research to include malaria parasite biology, mosquito vectors and interaction with humans ■ Continue vaccine development as a priority of U.S.-funded malaria research ■ Involve pharmaceutical and biotechnology firms in developing malaria vaccines, antimalarial drugs and vector control tools ■ Urge donor agencies to support research on control strategies and integrate new tools and technologies into ongoing control efforts ■ Identify mechanisms and targets of protective immunity and use novel technologies to create vaccines that induce immunity against the parasite life cycle ■ Support

malaria control programs that include funds to permit reassessing and optimizing antimalarial tools based on analyses of local epidemiologic, parasitologic, entomologic,

municable Disease Division, are to implement approved recommendations from the IOM report and a separate study of malaria in Africa completed by the American Association for the Advancement of Science, and to help malaria endemic countries to refocus their malaria prevention and control efforts. At the same time, USAID must persevere in the development of a vaccine. ■

Briefs

Private Firm Targets Kenyan Market for ORS Packets: Sterling-Winthrop, a major pharmaceutical firm, has prepared a 12-month plan—including market research, advertising strategy and test marketing—for a November 1992 introduction of oral rehydration salts in small retail outlets throughout Kenya. The initiative involves collaboration with USAID, the Ministry of Health, private firms and UNICEF.

USCEFA: The U.S. Coalition on Education for All (USCEFA) held its first national conference Oct. 30-Nov. 1 in Alexandria, Va. Participants represented U.S. and international education leadership and educators from 30 countries. Themes included designing education for the 21st century; mobilizing media and technology; and early childhood development. USCEFA is supported in part through R&D's offices of Education and Women in Development.

Ghana TV Sitcom Addresses Overpopulation: Ghana's newest television social drama, *Dangerous Numbers*, links inadequate health facilities, poor urban sanitation and a decrepit infrastructure to overpopulation. In the drama, a successful Accra native watches a friend and business associate slide toward ruin as his philandering and lack of family planning lead him from one misfortune to another. The program was produced with technical assistance from Johns Hopkins University, an *Office of Population* collaborator.

Success for Screwworm Eradication Effort: An international effort to eradicate the screwworm from Libya by releasing sterilized male screwworm flies appears to have been successful. Over 12,000 livestock infections were detected in 1990 but only six were recorded last year, none since April. USAID contributed \$6 million to the effort, led by the Food and Agriculture Organization, and the *Office of Agriculture* played a coordinating role.

USAID Fights AIDS: The second USAID-convened international conference on AIDS (Nov 4-5) reviewed lessons learned from USAID experience in implementing more than 650 AIDS prevention and control programs in 74 developing countries, world-wide. Hopeful signs of progress include: increased demand for condoms, which is being met through creative commercial marketing activities, and reported decreases in numbers of sexual partners by clients of AIDS information centers.

socioeconomic and behavioral determinants of malaria and the costs of malaria control.

Next steps, according to Bob Wrin, Chief of USAID's Com-

CGIAR 20th Anniversary

The Consultative Group on International Agricultural Research (CGIAR) celebrated its 20th anniversary during the annual International Centers Week meeting Oct. 28-Nov. 1. On the agenda was consideration of a draft paper by CGIAR's Technical Advisory Committee on research priorities and strategies that emphasized the need to build partnerships between national and international systems. The group also heard a progress report by the Australian Center for International Agricultural Research (ACIAR), implementing agency for a new CGIAR forestry research center. By May 1992, ACIAR will nominate a board of trustees, develop a research strategy and identify candidates for director general. The center is expected to be located in the Asian/Pacific region, and to

have programs in Latin America and Africa, reports Dr. Ralph Cummings Jr., (head of USAID's CGIAR liaison staff). The United States (USAID) and Australia will

co-sponsor the center, possibly with Japan. Core funds for all 16 CGIAR centers in 1992 will be \$25.1 million; USAID pledged \$43.4 million. ■

University Cooperation and Development Center

The R&D Bureau's new Center for University Cooperation and Development (known as University Center) was inaugurated Oct. 1 to broaden USAID's relationships with universities and their commitment to international development. According to Dr. Ralph Smuckler, Deputy Assistant Administrator for R&D, the

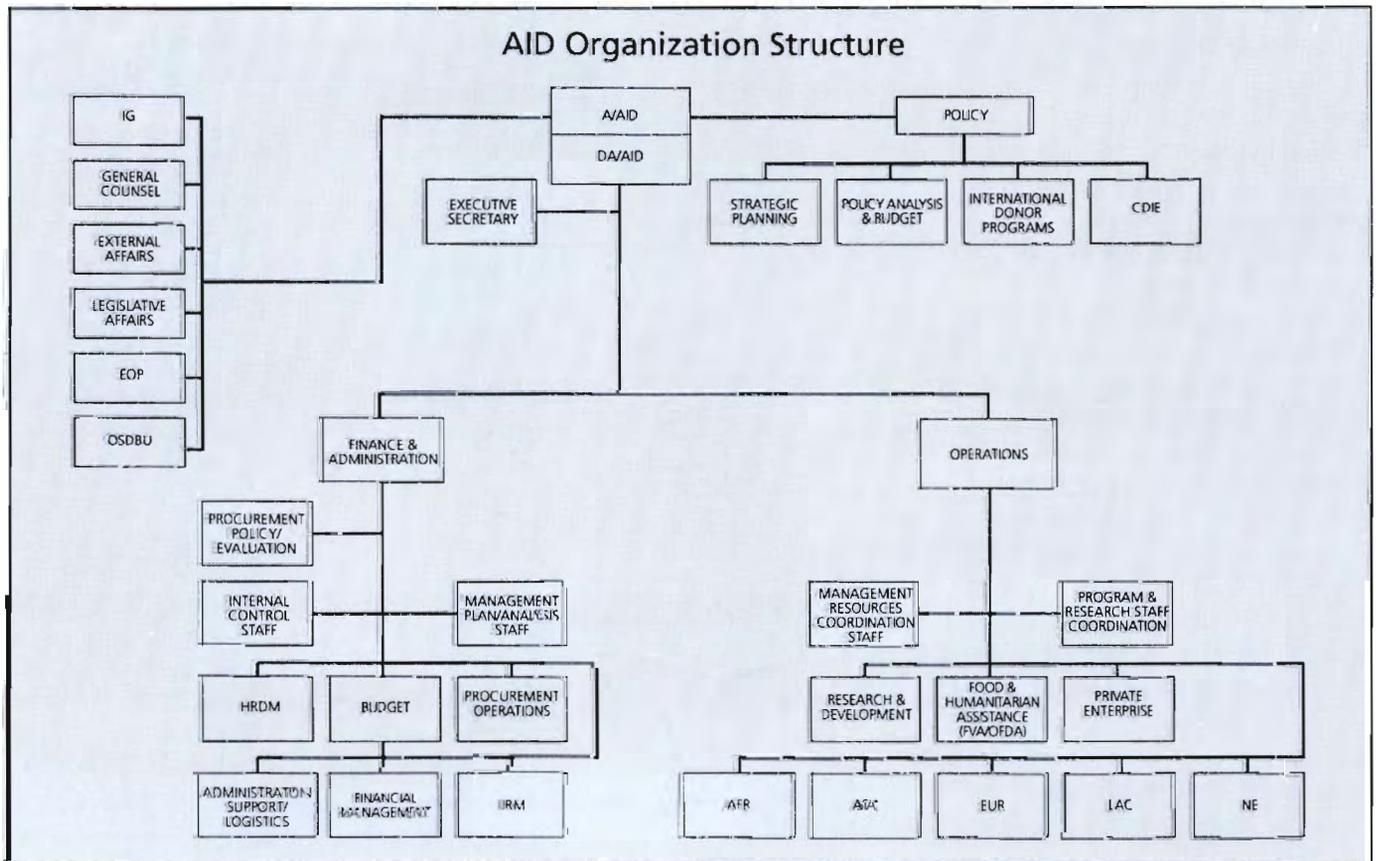
University Center will not control university-implemented USAID programs in developing countries—the missions have this role—but will assure that USAID policies and programs strengthen the relationship. In 1992 the Center aims to ■ Bolster developing-country (LDC) institutions and universities through networking and staff exchanges with U.S. institutions ■ Form partnerships between LDC institutions and U.S. universities that are internationalizing their programs, with funding help through the new University Linkages Project ■ Expand personnel sharing through mechanisms such as an international career corps, research grants for first sabbaticals, and matches of USAID professionals with Ph.D. candidates working on

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dissertations ■ And strengthen university commitment to developing countries, collaboration with the International Agricultural Research Centers, and direct interaction with field missions. ■





USAID and HIV/AIDS

In all regions of the world, men and women in their most productive years—when their contributions to family, community and country are most needed—are at greatest risk of contracting the human immunodeficiency virus (HIV) and the fatal acquired im-

mune deficiency syndrome (AIDS). HIV/AIDS is a massive but preventable public health challenge *and* a profound threat to the economic growth and social stability many nations are struggling to achieve. Since 1987, USAID has pioneered HIV/AIDS

prevention activities in 70 countries and launched 700 intervention activities. Over the next five years, USAID will invest \$400 million in comprehensive HIV/AIDS prevention programs and will demonstrate the impact of large-scale interventions in 15 developing nations.

Epidemiology.¹ Developing nations, least able to withstand the devastating effects of AIDS, are hardest hit. Adults and children in these countries soon will account for 90 percent of the world's HIV/AIDS cases. More than 50 percent of HIV-infected adults live in sub-Saharan Africa and 17 percent live in Latin America and the Caribbean. In Asia, where almost 25 percent live, quickly mounted, appropriately targeted interventions can slow the epidemic. Because policymakers in some Asian countries are willing to confront the HIV/AIDS threat now, in its early stages, it should be possible to contain the spread of HIV there.

A Word from Rich Bissell

The redefinition of the global system is reaching the world of science and technology at USAID. The Department of State speaks of a *new world order* of geopolitics. We at USAID, however, are confronted with simultaneous transitions that deeply affect our work. How we convert these challenges to opportunities will determine our effectiveness in the 1990s. Let me say a brief word about each transition. The **economic** transition has accelerated the move of societies and governments toward free markets. Empowering individuals through economic opportunity is reaching all continents. The **political** transition, moving countries toward democracy, is now seen as more than holding elections. New politics must involve honest and efficient governance—a major test in developing countries. The **demographic** transition, a volatile mix of rapid population growth, urbanization and migration, is changing many underlying assumptions about future development. **Environmental** transitions, including deforestation, loss of biodiversity, pollution and global climate change, once were seen as obscure issues but, after Rio, now have universal relevance. The **epidemiologic** transition, where people live longer in all regions through effective health interventions, has created public expectations beyond the reach of most governments. Finally, the **social** transition, of families and social structures challenged (indeed, fractured) by AIDS, by migration in search of jobs, by poverty and disasters, has made more difficult the response to long-term development problems. Each transition requires outstanding research to address development implications. Each also requires an interdisciplinary response unprecedented in the usual organization of science. USAID has made a start, but for the 1990s we will do better. These transitions generate momentum for change that, if properly channeled, will allow us to help millions of people improve their lives in this decade.

¹Sources: (1) *AIDS and the Agency for International Development: The Epidemic*, Feb. 1992. (2) Data from the draft of the *USAID 1992 Report to Congress on AIDS*.

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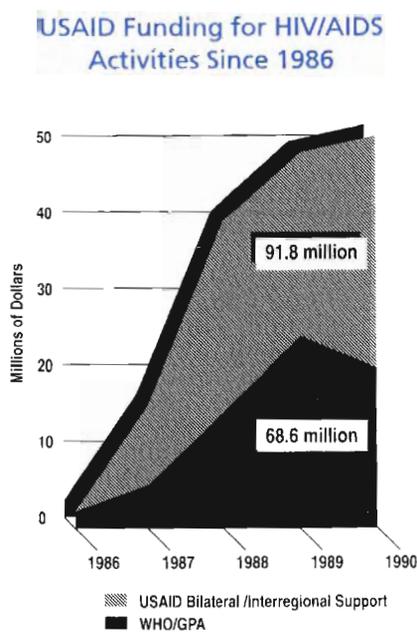
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In developing countries, the spread of AIDS is primarily a heterosexual problem, exacerbated by sexually transmitted diseases (STDs). Worldwide, more than three million women are HIV-positive, and the number of HIV-positive women and children is rising steadily. Women account for more than one-third of all cases of HIV infection, and in some regions the incidence of infections in women is increasing faster than HIV infections in men. Eighty percent of HIV infections worldwide have been sexually transmitted, most through heterosexual intercourse. Other STD infections, widespread in the developing world, are themselves exacerbated by HIV. One USAID prevention effort targeting women supports development of female-controlled methods for preventing STDs, such as female condoms and vaginal virucides.

AIDS' Socioeconomic Impact.²

AIDS—a development issue as well as a health problem—is changing the social fabric of many countries. Ten million children in sub-Saharan Africa will have lost one or both parents to HIV/AIDS by the year 2000. As productive adult family members become infected and die, orphaned children may be fostered, or may live in households without adults or with grandparents who themselves need economic support. A substantial increase in child labor and school drop-outs may occur. Strategies for dealing with AIDS' development impact must comple-

ment disease prevention and treatment strategies. Family decision-making (drawing on savings and selling off resources) affects survivors' economic and social well-being, and has important implications for other sectors. Mitigating AIDS' downstream effects requires understanding family responses to AIDS, family coping mechanisms, and how family members faced with AIDS allocate human and capital resources. This issue was explored in



Source: A.I.D.

a recent seminar sponsored by the Family and Development Initiative. In terms of country-specific key sectors, HIV infections, leading inexorably to future AIDS cases and deaths, could substantially reduce an already thin professional community in developing nations. This has serious implications for future development and security. Labor productivity also is likely to suffer as key blue-collar and more elite groups become infected with HIV.

These groups may even be at increased risk. Small landholders and workers in sectors such as agriculture and mining also may be at increased risk because they travel to urban areas and have unprotected sexual intercourse with commercial sex workers. Research progress in new fields of particular importance to development is likely to be impaired as a result of AIDS-related deaths in the scientific community among professionals aged 20 to 40. Without specialists in new technologies, several less developed countries are unlikely to achieve sustainable development. This issue presents difficult ethical decisions for host countries in terms of whether to invest in the education of technicians and professionals without regard to their initial and subsequent HIV infection status.

Lessons Learned by USAID.

- Large-scale, comprehensive intervention programs supported by government leaders, the private sector and other nongovernmental organizations will have the greatest impact in countries that implement such interventions as early as possible, before HIV seroprevalence rates become high in rural as well as urban areas.
- Carefully targeted activities designed for commercial sex workers, STD clinic patients, adolescents, and women of reproductive age may be most appropriate in low-prevalence countries.
- Research is needed on sexual behavior and cultural and socioeconomic factors that influence behavior change.
- According to modeling and epidemiological studies, three strategies will have the greatest impact on slowing the AIDS

²Sources: (1) *The Socioeconomic Impact of AIDS: From the Household to the Macroeconomy* (seminar), Martha Ainsworth, March 1992. (2) *AIDS and the Agency for International Development: The Epidemic*, Feb. 1992.

epidemic: encouraging people to reduce the number of sexual partners; improving STD diagnosis, treatment, and prevention; and increasing access to and use of condoms. In most developing countries, AIDS is a heterosexual disease that increasingly affects women. Women also play a key role in prevention efforts as mothers, caregivers, and educators. ■

Publications

Applications of Biotechnology to Traditional Fermented Foods (1992). National Academy Press, Washington DC. Copies from Wendy White, National Academy of Sciences, 2101 Constitution Ave., Washington DC 20814.

BIFADEC Task Force Report on the University Center Program (March 1992). BIFADEC Occasional Paper No. 15, 30p. This report is helping guide program planning of the University Center staff and advisers. Copies from Agency Center for University Cooperation in Development, Room 900, SA-38, Washington DC 20523-1807, 703/816-0292.

Biotechnology for the 21st Century (1992). This report, by the Federal Coordinating Council for Science, Engineering and Technology Committee on Life Sciences and Health, discusses the integrated research strategy and budgets for federally funded biotechnology research. Copies from Joel Cohen, R&D/AGR, Room 409, SA-18, Washington DC 20523-1809, 703/875-4219.

Economic Implications of New Forage Technology on Small Farms in Western Kenya (1991). Nyaribo, F.B., J.F.M. Onim and D.L. Young, in *Proceedings of the Joint Animal*

Feed Resources Network Workshop. Introduction of new forages and meat and milk goat production permits small farms to increase incomes by between 360 and 497 percent, medium farms by 19 to 22 percent. Copies from Dr. F.B. Nyaribo, Winrock International, Petit Jean Mountain, Morrilton AR 72110.

Engendering Development in Asia and the Near East: A Sourcebook (1992). Rekha Mehra, David Bruns, Paul Carlson, Geeta Rao Gupta, Margaret Lycette. Published by the International Center for Research on Women for the Office of Women in Development. Examines trends in women's contribution to economic growth and participation in public life in Asia and Near East countries. Copies from the International Center for Research on Women, 1717 Massachusetts Ave N.W., #302, Washington DC 20009.

Fishery Profiles of 23 African Coastal Countries (1992). Brainerd, T.R., D.D. McCreight, R.B. Pollnac. University of Rhode Island International Center for Marine Resources Development Technical Series, 47p. Harvest, import, export, social, and general information, graphs for each country on per capita fish supply and seafood production and trade. Copies from International Center for Marine Resources Development, University of Rhode Island, 126 Woodward Hall, Kingston RI 02881-0804.

Food Reviews International (1992), "Special Issue on Grain Amaranth: New Potential for an Old Crop." Vol. 8, No. 1, Marcel Dekker Inc., New York. Edited by Judith Bale and Charles Kaufman, based on R&D/R-sponsored research through the National

Academy of Sciences on the grain amaranth. Copies from Wendy White, National Academy of Sciences, 2101 Constitution Ave., Washington DC 20814.

Forestry/Fuelwood Research and Development Project (1992), "Multipurpose Tree Species Research Network," 24p. Winrock International. Summarizes accomplishments and plans of an Asian-based network of biological and social scientists who conduct research related to multipurpose trees. Copies from Rita Butler, Winrock International, 1611 N. Kent St., Suite 600, Arlington VA 22209.

Gender Relevant Findings: Synthesis Report (June 1992). Women in Development Action Group, Bureau for Research and Development, USAID. Results of an R&D Bureau campaign to strengthen its Gender and Women in Development strategy. Copies from Fern Finley, R&D/PO, Room 709, SA-18, Washington DC 20523-1804.

Integrated Management of Agricultural Watersheds: Characterization of a Research Site near Hamdallaye, Niger (1991). Tropsoils Bulletin No. 91-03, 111p. Texas A&M University, College Station, Texas. Findings of a site characterization and feasibility study of a selected portion of the Hamdallaye watershed. Copies from Soil Management CRSP, Box 7113, North Carolina State University, Raleigh NC 27695-7113.

Integrated Pest Management and Pesticide Management (1991). A report to Congress on USAID activities since 1990 on steps taken to increase awareness of integrated pest management principles and to institutionalize this concept in agency planning and assistance programs. Copies from Allan Showler, R&D/AGR, Room 409,

SA-18, Washington DC 20523-1809.

Foreign Assistance Agencies as Advocates and Innovators (1992). John A. Daly, Chapter 5 in *Microcomputers in African Development: Critical Perspectives*, edited by Suzanne Grant Lewis and Joel Samoff, Westview Press, Boulder CO. Copies from John Daly, acting director, R&D/Office of Research, Room 320, SA-18, Washington DC 20523-1818.

Microlivestock: Little-Known Small Animals with a Promising Economic Future (1991). National Academy Press, Washington DC. Copies from Wendy White, National Academy of Sciences, 2101 Constitution Ave., Washington DC 20814.

Neem: A Tree for Solving Global Problems (1992). National Academy Press, Washington DC. Copies from Wendy White, National Academy of Sciences, 2101 Constitution Ave., Washington DC 20814.

Policy Issues in Microcomputer Applications for Developing Countries (1992). Report of an ad hoc panel of the National Academy of Sciences on the use of microcomputers for developing countries, Westview Press, Boulder CO. Copies from Wendy White, National Academy of Sciences, 2101 Constitution Ave., Washington DC 20814.

Program Plan of the Office of Energy and Infrastructure (1992-93). Appendix 3 lists all reports and how to obtain them. Copies from R&D/EI, Room 508, SA-18, Washington DC 20523-1810.

Social Science Applications in Asian Agroforestry (1992). Burch, W.R. and J.K. Parker, 187p., Winrock International and South Asia Books, USA. Draws from political

science, anthropology, economics, and sociology to identify agroforestry practices and technologies for Asian farmers. Copies from Rita Butler, Winrock International, 1611 N. Kent St., Suite 600, Arlington VA 22209.

Thomas Jefferson Fellowship Program: Statistical Report. Contains tables, charts, and statistical trends. Analysis based on discipline, field of study, age, gender, participation by Historically Black Colleges and Universities, etc. Published each January by the Office of International Training. Copies from R&D/OIT, Room 210, SA-16, Washington DC 20523-1601. ■

UNCED

In June, the R&D/ENR office covered all bases at the environmental meetings in Rio de Janeiro. Office director Dr. Twig Johnson represented the R&D Bureau and R&D/ENR on the official U.S. delegation at the United Nations Conference on Environment and Development (UNCED). Representing R&D/ENR as well as EID, Dr. Nancy Diamond networked with representatives from non-governmental organizations (NGOs) at Global Forum '92, a series of events at UNCED that allowed all sectors to express views on environmental issues.

During the past decade, R&D/ENR and other R&D offices have supported work on many issues discussed at UNCED and the Global Forum. Projects have begun on biodiversity conservation, tropical forest management and agroforestry, environmental policy, coastal and marine resource management, environmental health, pollution prevention, and issues related to indigenous

communities. USAID and R&D continue to play a leadership role in the multilateral policy dialogue initiated by UNCED and the Global Forum. USAID involvement in UNCED and its preparatory meetings contributed to the inclusion of "participatory language" in many UNCED conventions. On the NGO front, USAID was one of a few bilateral donors represented at the Global Forum. Both meetings helped improve government-NGO dialogue and cooperation on environmental issues.

Looking ahead, the United States will continue to support USAID activities on key environmental issues. Funding levels for USAID's programs in environment and natural resources will likely increase in the next few years.

At the conclusion of UNCED and the Global Forum, many were optimistic about improved possibilities for multilateral cooperation. Delegates were hopeful that the newly created U.N. Commission on Sustainable Development will be an effective vehicle for monitoring and encouraging progress on UNCED environmental conventions. ■

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Briefs

Source: *Information Memoranda for the Administrator, Weekly Reports*

Education A new Honduran adult education initiative using USAID's interactive radio instruction methods will develop a series on democratic, legal, and civic education. Topics for an initially targeted 100,000 adults include family law, constitutional rights, penal codes, consumer protection, electoral processes, and human rights. ■ R&D joined the World Bank and others to help the Benin government develop and execute a comprehensive education reform strategy. The project, *Improving the Efficiency of Educational Systems*, offers technical assistance and consultants to help the Ministry of Education develop action plans for school texts, evaluation, school mapping, quality learning, and educational finance.

Environment Through its Biodiversity Support Program, R&D helped sponsor a Smithsonian symposium on how nontimber forest products help rainforests. The Papua New Guinea government asked the same program to assess conservation needs in its country. ■ An Environmental Improvement Project team visited ASEAN countries in May as part of a plan to promote private-sector solutions to urban and industrial problems, especially by using advanced U.S. equipment. ■ The *Coastal Resources Management* project has generated outside interest: the Rockefeller Foundation requested a presentation on the project's approach to resource management and training; a briefing was given to an international trade delegation from the Hainan Province, People's Republic of China; and discussions were held with a Swedish coastal development expert. ■ Consultants from the *Water and Sanitation for Health* project visited southern Africa with Office of Foreign Disaster Assistance teams to examine water availability and quality and sanitation implications of water shortages. After

finding rivers, reservoirs, and dams drying up and threatening community water supplies, they recommended rationing and, through the *Food for Work* program, repairing infrastructure and digging and deepening hand-dug wells. ■ The *Mexico Business and Development Initiative* brings Mexican and U.S. companies together to pursue business in Mexico's air- and water-pollution control market. The effort has given more than 150 U.S. companies market information and business contacts with Mexican companies in the paper and pulp, chemical, steel, soap, and textile industries. ■ A new biotechnology policy, developed jointly by the Food and Drug Administration (FDA) and the Council on Competitiveness, sets precedents for USAID's biotechnology initiatives. Although the policy will help move edible products from testing to market in the United States and developing countries and consolidate new product biosafety standards, it remains essential to ensure that developing countries' standards for testing and consuming biotechnology-derived products are consistent with U.S. standards and that host-country approvals are obtained. The Agriculture Office's *Agricultural Biotechnology for Sustainable Productivity* project will monitor commercial development of pest- and pathogen-resistant products, which need combined approval from FDA and the U.S. Department of Agriculture. ■ R&D and USAID/Delhi helped Connecticut-based ECOAIR, a refrigerant and manufacturing company, launch a joint venture with an Indian company to develop ozone-safe refrigeration. ECOAIR will develop chlorofluorocarbon (CFC)-free refrigeration and air conditioning technology as part of the *Project to Accelerate Commercial Technology*.

Energy Energy officials from Tunisia, Egypt, Jordan, and the United Nations Economic and Social Council for Asia-Pacific have asked the Office of Energy and Infrastructure (EI) for help with its Energy Efficiency Techni-

cal Assistance Service. EI also played a key role in a U.S.-Brazil seminar in Rio de Janeiro on electric power development, which allowed Brazilian officials to examine the history of private-sector participation in energy development. U.S. and Brazilian private-sector officials discussed the prospect of replicating the U.S. model of privately owned and operated utilities, and formally agreed to cooperate on private energy investment in Brazil. ■ USAID will offer recommendations on the structure of the National Power Corp. (NPC) of the Philippines' private power program, including policies on *wheeling* power from privately owned power plants via power grids and privatizing NPC assets. EI and USAID/Manila collaborated on this technical assistance. ■ R&D is cost-sharing a prefeasibility study for a project to produce electricity from methane at a Philippine dairy and swine farm. The study, conducted by U.S.-Philippine joint venture Ecotec Corp., will assess technical and commercial prospects for two anaerobic digestion systems that produce electricity and fertilizer and control pollution. ■ Promising sites in Tamil Nadu, India, were identified for using sugarcane wastes as fuel to produce surplus electricity for sale. The EI-sponsored assessment also examined rice husks, straw, and sawmill wastes for use as fuel. ■ African Development Bank officials heard R&D briefings on potential savings from using energy-efficiency measures in developing-country power sectors. The bank is formulating policy statements and guidelines on energy and the environment for release later this year. R&D gave a similar presentation to the African Energy Policy and Research Network in Botswana. ■ The Mexican government asked EI to help design and implement a project to minimize air pollution emissions from Mexico City industrial boilers. A pilot project might promote the use of U.S.-manufactured combustion and emissions control equipment. ■ USAID is funding a feasibility study of a private

60-megawatt coal-fired power station in Kingston, Jamaica. If the study shows promise, the Caribbean Electric Power Company will sell electricity to the Jamaica Public Service Co. under a 20-year agreement. Caribbean Electric Power—which will develop, finance, construct, own and operate the pilot project—is a consortium of U.S. private power development and financing organizations. ■ Solar-energy powered lanterns soon will light rural households in southeast India. The lanterns are part of a market-seeding project supported by EI and the Rockefeller Foundation. A U.S.-India joint venture will develop the sales, financing, and service infrastructure for an expanded lighting system.

Drug Awareness The *Narcotics Awareness and Education* project has been at work in Guatemala, the Dominican Republic and Mexico; it is helping Guatemala's National Council Against Alcoholism and Drug Abuse test innovative approaches to substance abuse prevention, including new methods for training primary school teachers, innovative seminars for public-sector health professionals, and a mass media campaign. So far, 350 primary school teachers have been trained. Similar efforts are planned for middle- and secondary-school teachers. ■ The project issued a preliminary report of its national survey of drug use and attitudes in the Dominican Republic. Fewer than 3 percent of those sampled had ever used marijuana, cocaine, crack, or inhalants; even fewer for comparable groups in Panama, Peru, and Guatemala. The survey will be used to design national drug prevention programs. ■ The project also conducted a five-day technical assistance visit to drug awareness programs in four Mexican cities.

Agriculture Hybrid maize varieties developed by the International Institute of Tropical Agriculture have catalyzed development of a growing private-sector seed industry in Nigeria. The companies supply seed of known

varietal purity and help accelerate the adoption of new varieties. This fledgling industry has enormous potential for sustaining Nigerian agricultural development.

Population APROPO, a private health marketing and communication organization in Lima, Peru, created *Ms. Rumors*, a street-theater drama delivering a strong message against myths about family planning and contraceptives. *Alo Guisella*, Peru's most popular TV program among the female audience and second nationally, invited APROPO to air 12 4-minute sketches during its 1992 programming. This spin-off is allowing APROPO to reach nearly 1.8 million people in Lima at an estimated production budget of \$550 per presentation. The Johns Hopkins University Population Communication Service has worked closely with APROPO to design and evaluate *Ms. Rumors*.

Health and Nutrition A counseling card system developed in Indonesia with R&D Office of Health help was replicated in Guatemala. The cards, used by village volunteers, offer a step-by-step guide to diarrheal disease control and oral rehydration therapy. As a result, in Guatemala, appropriate treatment for diarrhea more than doubled. The cards and related training are expected to be developed throughout Latin America. ■ The Nutrition Office completed a baseline survey in Nepal on the impact of home gardening on children's consumption of vitamin A-rich foods. Findings show that home gardens contribute significant amounts of micronutrients to young children's diets, particularly in communities with severe malnutrition. Improvements in micronutrient status will be monitored regularly. ■ Officials from U.S. pharmaceutical and biotechnology firms met with government leaders to discuss participation in the Children's Vaccine Initiative. The Office of Health, the Pharmaceutical Manufacturer's Association, and the Department of Health and Human Services sponsored this working

group, which recommended more joint ventures pairing U.S. and developing country manufacturers to produce vaccines, support for a fund to stimulate research and development by subsidizing the purchase of new vaccines, and support for closer linkage of U.S. and international vaccine objectives. ■ Most pregnancy-related deaths worldwide occur in developing countries, which have maternal mortality rates as high as 1 percent to 2 percent. Common causes are hemorrhage, eclampsia, and sepsis, a toxic spreading of bacteria. At a meeting in Geneva this year, a World Health Organization (WHO) technical working group discussed infection patterns; guidelines for prevention, detection, and treatment; protocols for clean delivery and control of neonatal tetanus; and indicators for monitoring and evaluating clean delivery strategies. Proceedings and guidelines will be available later this year. A substantial portion of the risk of perinatal HIV transmission from infected mothers to their infants probably occurs at delivery and could be prevented by measures discussed in the WHO report. ■ The Offices of Health and Nutrition sponsored a seminar on studies in Ghana and Indonesia on the effect of vitamin A supplements on the frequency and severity of illness, particularly diarrheal and respiratory diseases, among children. Supplementation with high doses of vitamin A every four months in Ghana reduced duration and severity of acute respiratory diseases as well as complications from measles. Results were somewhat mixed in Indonesia. ■ Zimbabwe's Minister of Health announced that the injectable contraceptive Depo-Provera can be used in the Zimbabwe National Family Planning Program. The once-popular contraceptive was banned in Zimbabwe in 1980. One factor in expanding its use was a WHO study that reported no apparent increased risk of breast cancer associated with the drug. ■

Cacao Breeding Breakthrough

Millions of small farm holders in the tropical world, including West Africa and Central and South America, grow *Theobroma cacao*, the unique source of cocoa, cocoa butter, and chocolate. They still plant the crop by seed, which results in considerable variability in disease resistance and yield from plant to plant. Micropropagation by tissue-culture techniques of clones of high-yielding, disease-resistant specimens could solve this problem, but cacao has resisted this breeding technique under conventional *in vitro* techniques.

Antonio Figueira, a Brazilian graduate student working at Purdue University's Department of Horticulture under Professor Jules Janick, made progress in this area under a grant from the Program of Science and Technology Cooperation. Figueira cultured shoots exposed to high concentrations of carbon dioxide, up to 30,000 parts per million (ppm) (ordinary air contains 350 ppm). The technique allows researchers to establish single-node cuttings from mature plants and to subculture shoots. With this method it should be possible to produce millions of cloned plants from a single elite tree. Dr. Carmen Soarez at the National Institute of Agricultural Research in Pichilingue, Ecuador, is organizing a laboratory to use the new technology to breed plants resistant to witches broom, a devastating disease threatening cacao in Ecuador and Brazil. This technique would help preserve disease-resistant germplasm and aid in its distribution, which now is hindered by quarantine restrictions. Moreover,

it appears that the high carbon dioxide approach may work for other recalcitrant tree crops. And there are spin-offs from the research. With James BeMiller of Purdue's Whistler Center of Carbohydrate Research, Figueira and Janick extracted and characterized the gum from cacao stems and pods, and found it has promise as an industrial food gum—suggesting an important economic use for a current waste product. With Peter Goldsborough, Figueira and Janick are developing molecular techniques to define genetic relationships among cacao cultivars (agriculturally derived plant varieties), emphasizing sources of resistance to witches broom. ■

CGIAR's Compact International Agricultural Research Library

The Consultative Group on International Agricultural Research (CGIAR) is creating one of the world's largest full-text libraries on CD-ROM—the Compact International Agricultural Research Library, Basic Retrospective Set (CIARL BRS). The collection's first publication is a set of 17 CD-ROM disks that house a comprehensive agricultural research library. Users will have access to complete text, images, and catalog records for 1,350 titles originally published by 20 international agricultural research centers; key books, serials, and proceedings published between 1962 and 1986 (2,000 documents); 190,000 pages converted to text; 50,000 monochrome images, including graphics and photographs; and 1,900 color images (maps and field guides).

CIARL BRS documents come in 11 languages but most are in English, Spanish, and French. Research areas include: developing new technologies to increase productivity; protecting the productivity of natural resources; helping developing countries formulate and carry out effective food, agriculture, and research policies; conserving and making germplasm available to all regions and countries; and building links between institutions and in developing countries and the global agricultural system. For information contact CG Secretariat Information Unit, Room N-5041, World Bank, Washington, D.C. 20433, 202/473-8913. ■

Responding to Household Needs

Key to Profitable Rural Banking

Indonesia operates the most successful nationwide system of rural banking in any developing country. In the early 1970s, the Bank Rakyat Indonesia (BRI) developed a banking network to channel subsidized rural lending programs. Losses to the government and the financing institution were high. Financial deregulation in 1983 allowed banks to set their own interest rates on most loans and deposits. BRI restructured its unit banking system and in 1984 instituted a program of general rural credit at commercial interest rates and a new program of rural savings mobilization. The rural credit program is called KUPEDES. By December 31, 1991, KUPEDES' outstanding credit was \$769 million with a low 3 percent long-term loss ratio; unit bank

deposits totaled \$1.3 billion. The unit banking system contributed more than half of BRI's total profits.

According to Marguerite Robinson, a social anthropologist at Harvard University's Institute for International Development, analyses of households as decision-makers and consumers of financial services were integral to the design and implementation of this economically and socially profitable banking system. Reasons for BRI's success include the following:

1. Good, consistent macro-economic policy and political stability at the national level, creating the underlying condition needed for a sustainable system of rural banking.

2. Understanding that subsidized credit programs do not promote rural development and typically inhibit development of sustainable rural financial institutions.

3. The 1984 introduction to BRI unit banks of the KUPEDES rural credit program at an annual effective interest rate of about 33 percent, and savings instruments that offer mixes of liquidity and return appropriate for varied demands of local financial markets. The spread between loan and deposit interest rates gives BRI's unit banking system a 6 percent profit after deductions for overhead and bad-debt reserve.

4. BRI's achievement in realizing much of its president-director's goal to develop a *new culture* in the bank that emphasizes accountability, professionalism, initiative, innovation, strategic thinking, and respect for customers.

BRI's unit banking system has been successful in reaching many customers who had never borrowed from or saved in a financial

institution, although it still does not generally reach the very poor. ■

Publications

Adolescent Sexual Activity and Childbearing in Latin America and the Caribbean: Risks and Consequences (1992). Findings and implications of surveys in several countries since 1985. English and Spanish copies available from the Population Reference Bureau, 1875 Connecticut Ave. NW, Washington DC 20009-5728, 202/483-1100.

Business Focus Series: A report series describing energy and environment-sector business opportunities, macroeconomic indicators, and market conditions in Latin America, the Caribbean, and ASEAN countries, developed by the Office of Energy and Infrastructure in cooperation with USAID Bureau for Latin America and the Caribbean, and the US-ASEAN Business Council. Two reports focus on environmental markets; four reports address private power business opportunities. Strategies are suggested for U.S. firms entering these sector markets in the countries covered.

Environmental Market Conditions and Business Opportunities in Key Latin American Countries (October 1992), 141 pp.

Energy and Environment Market Conditions in Mexico (July 1992), 74 pp.

Private Power Business Opportunities: Central America (April 1992), 37 pp.

Private Power Business Opportunities: The Caribbean (April 1992), 55 pp.

ASEAN Electric Power Generation Markets: Opportunities for U.S. Companies (September 1992), 75 pp. Contact: Ms. Rocio Rabie, Private Sector Energy Development Project (PSED), K&M Engineering, 1601 N. Kent St., Suite 1102, Arlington VA 22209, 703/524-4400, fax 703/524-3164.

Fertility and Family Planning in Latin America: Challenges of the 1990s: Chartbook (1992). Information on the significant demographic change in Latin America over the past three

decades in charts, graphs, and narrative. English and Spanish copies available from the Population Reference Bureau, 1875 Connecticut Ave. NW, Washington DC 20009-5728, 202/483-1100.

List of Free Materials in Family Planning/Maternal and Child Health, Fifth Edition (1992). List of free materials worldwide on family planning, maternal/child health, primary health care, AIDS, population, development, information sources. Contact: Catherine Murphy, training materials officer, INTRAH, 208 N. Columbia St., Chapel Hill NC 27514.

Population Trends: Kenya, Indonesia, India (1992). Three reports by Arjun Adlaka summarize population trends in each country and provide data on key indicators including population size, fertility rates, contraceptive prevalence and use, life expectancy, and infant mortality rates. Contact: Center for International Research, U.S. Census Bureau, Washington DC 20233.

Population Growth, Poverty and Environmental Stress: Frontier Migration in the Philippines and Costa Rica (1992). Cruz, Meyer, Rapetto, Woodward. Examines interactions among population growth, national policies, external debt, immigration, and deforestation in two developing nations. Contact: World Resources Institute Publications, PO Box 4852, Hampden Station, Baltimore MD 21211.

The Office of Women in Development (WID) offers the following documents at no charge to the public. A more extensive collection of WID reference documents is available in open stacks at the USAID Library, 1601 N. Kent St., Rosslyn Plaza, Room 105, Arlington, VA 703/875-4818. Contact: Publications Manager, WID, USAID, Room 714, SA-18, Washington DC 20523-1816:

The Role of Women in Evolving Agricultural Economies of Asia and the Near East: Implications for USAID's Strategic Planning (May 1991). Inji Islam, Ruth Dixon-Mueller, 105 pp. Examines the dynamic characteristics of economic growth in Asian and Near Eastern

countries in five strategic areas: agribusiness development, natural resources management, agricultural planning and analysis, infrastructure management, and trade and market development. (PN-ABH-730)

Educating Girls: Strategies To Increase Access, Persistence and Achievement (1991). Karen Tietjen, Cynthia Prather (Eds.), 120 pp. Reviews policies, programs, and projects implemented by governments, donors, and other institutions to increase girls' access and achievement at primary-school level. (PN-ABK-950)

The Economic and Social Impacts of Girls' Primary Education in Developing Countries (December 1990). Maria Floro, Joyce M. Wolf, 105 pp. (Specify English, French, Spanish). Worldwide literature review explores evidence of the impact of girls' primary education. (WID-039)

Financial Services for Women—Tools for Microenterprise Programs: Financial Assistance Section (March 1992). Jean C. Weidemann, 40 pp. State-of-the-art guide to financing women's enterprises. (PN-ABL-375)

Gender and Adjustment (June 1991). Ron Hood, Mary Altomare, Lawrence Haddad, Martha Starr-McCluer, Virginia Hubbs, 194 pp. Theories and models of adjustment, including case studies from several countries with lessons for donors. (PN-ABI-677)

Conference Proceedings: Women, Economic Growth and Demographic Change in Asia, the Near East and Eastern Europe (May 1991). Inji Islam, Paula J. Bryan, Tulin Pulley (Eds.), 50 pp. Part of a special series of studies prepared for the conference. (PN-ABK-842)

Women's Income, Fertility and Development Policy (May 1991). Boone A. Turchi, Mary Mulhern, Jacqueline J. Mahal, 61 pp. A framework for understanding how development policy can affect women's fertility through its impact on their labor force participation. (PN-ABH-726)

Lessons Learned from the Advanced Developing Countries (1991). Susan P. Joekes, 75 pp. The rapid economic growth in advanced developing

countries of Asia is causally linked to women's economic participation, and early attention to female education was important to this development pattern. (PN-ABH-729)

Engendering Development in Asia and the Near East: A Sourcebook (1992). Rekha Mehra, David Burns et al., 121 pp. (PN-ABL-503)

Poland: Gender Issues in the Transition to a Market Economy (1991). Coopers and Lybrand Assoc. Ltd., 59 pp. Documents how women in Poland bear a disproportionate amount of hardship due to the country's economic and political reforms. (PN-ABL-103)

Hungary: Gender Issues in the Transition to a Market Economy (1991). Coopers and Lybrand Assoc. Ltd., 61 pp. Documents how women in Hungary bear a disproportionate amount of hardship due to the country's economic and political reforms. (PN-ABK-002)

Women and the Law in Asia and the Near East (1991). Lynn P. Freedman, 44 pp. How the law deprives women of autonomy and undercuts the success of women's participation in USAID projects. (PN-ABH-727) ■

University Center Project Funds 28 Linkage Projects

Two years into the five-year University Development Linkages Project (UDLP), 28 linkage projects are funded in 23 countries involving 33 U.S. and 33 developing-country institutions of higher education. Funding by USAID—\$15.5 million over five years—is matched by participating institutions with non-USAID funds and in-kind contributions. The multidisciplinary, cross-sectoral linkages emphasize quality, innovation, and sustainability. Half the linkages deal with health, 43 percent with business and management, and 29 percent with environmental issues. UDLP awards also

support work in agriculture, technology transfer, legal education, child survival, and democratization. Six linkages (21 percent) have historically black colleges or universities as lead or participating institutions. Two linkages are co-funded by R&D's Office of Women in Development. Other UDLP activities—curriculum development and expansion, faculty and student exchanges, training, workshops, pilot research projects, and creation of outreach centers—are based on specific objectives for each linkage that are agreed on and defined by partnered institutions. The broad areas of collaboration between institutions must be in harmony, but need not be aligned with field mission strategies. All linkages contribute to the internationalization of U.S. colleges and universities, and strengthening developing-country institutions. ■

Briefs

Source: Information Memoranda for the Administrator, Weekly Reports

Agriculture In 1990 the International Maize and Wheat Improvement Center (CIMMYT) and the International Center for Tropical Agriculture (CIAT) invested \$22.3 million in research on beans, maize, rice and wheat. Increased farm production due to improved varieties of these staples returned more than \$1 billion to the Latin American region the same year—about 46 times the CIMMYT/CIAT total research investment on the four commodities. The combined nine mandated crops of CIMMYT, CIAT and the International Potato Center generated \$26.6 billion in 1987-89 in returns to land, labor, and capital investment. Production increases came mainly from higher food production per unit of land. ■ The Office of Economic and Institutional Develop-

ment (EID) met with the Produce Marketing Association (PMA) to discuss trade association participation in the proposed Agribusiness and Marketing Improvement project. PMA serves more than 2,000 agribusiness members and is a potential source of technical assistance, information, training, and advisory services. USAID is exploring the use of such associations to strengthen agribusiness in developing countries. ■ For 70 years rubber seeds—digestible, readily available, inexpensive, and otherwise treated as waste—have generated interest as a source of food protein for cattle, sheep, goats, and poultry. Small Ruminant CRSP researchers in Indonesia, the world's second-largest rubber producer, now are experimenting with rubber seeds that can be used to feed sheep. ■ Engineers at the International Rice Research Institute designed a portable rice micromill for rural Philippine women, who either travel long distances to commercial mills to process rice or spend up to 40 percent of their time each day hand-pounding rice. Profits generated by the micromill in central Luzon are used for low-interest loans for household needs and rice-farming expenses. Two models are priced at \$200 and \$230; their output compares to that of commercial village mills. Micromills are being tested elsewhere in the Philippines, and in Bangladesh, Indonesia, and Thailand. ■ The disease Bean Golden Mosaic Virus has destroyed many bean fields throughout South America and the Caribbean. In the Dominican Republic, Bean/Cowpea CRSP researchers found that delaying bean planting time greatly reduces disease incidence by reducing the population of disease-carrying white flies. Using these findings, scientists worked with the Ministry of Agriculture to effect a fallow period that increased national bean production 18 percent. ■ While Zimbabwe and the rest of southern and eastern Africa experience this century's worst drought, the CIMMYT is working to control a darker menace, maize streak virus. Most hybrid corn

grown in eastern and southern Africa (14 million acres) is susceptible to this virus. Early infection on susceptible maize can cause a 100 percent yield loss. A serious outbreak in Kenya in 1988 destroyed 80 percent of that year's harvest, an estimated \$216 million in lost grain. Corn breeders at CIMMYT's Harare research station are working to deliver seeds with streak virus resistance to seed companies, aid organizations, and national agricultural programs in eastern and southern Africa. The Mozambique seed company, SEMOC, distributes two CIMMYT-derived varieties, and other national programs, particularly those of Malawi and Kenya, draw heavily on CIMMYT streak-resistant maize products in their breeding work.

Higher Education The Agency Center for University Cooperation in Development has met with scholars and university and USAID officials to prepare for the new Higher Education and Development project. Outside African specialists, 11 key Africa Bureau representatives, and some University Center staff attended a recent higher education workshop in Africa. A symposium on strengthening collaboration and improving the quality of higher education in Africa, Latin America, and Eastern Europe was held October 1-2 for university representatives from around the country and officials from USAID, the World Bank, and the American Council on Education.

Energy Prompted by a national outreach program of advertising, direct mail, and seminars, 500 U.S. companies have requested applications for the Office of Energy and Infrastructure's (EI) newly expanded Energy Project Development Fund. Major equipment suppliers, project developers, and engineering and construction firms expressed interest in energy projects in the New Independent States (NIS), Latin America, the Caribbean, and Asia. The Fund supports feasibility studies of private-sector energy project initiatives. ■ In a collaborative effort with

USAID/Panama, EI identified areas in which the private sector can contribute to Panama's electricity supply. USAID's proposed Private Sector Energy Development program—offering the Panamanian government and the national power agency guidelines, procedures, and an evaluation process—is expected to encourage private participation and help Panama overcome electric power shortages. ■ U.S. clean coal technology may be used in Indonesia to upgrade low-rank coal, a result of a June 1992 Association of Southeast Asian Nations Trade Mission, cosponsored by EI and the Department of Energy. Indonesia could export this upgraded coal and earn badly needed foreign exchange. This could also contribute to lower sulfur emissions in the region. ■ Southern California Edison and the Los Angeles Department of Water and Power organized and funded a three-day efficient lighting workshop, attended by Mexican utility officials, as part of a USAID-funded Mexican technical assistance program. The effort will design a pilot program to introduce compact fluorescent light bulbs, which use a fourth as much energy as incandescent bulbs. ■ Energy efficiency and integrated resource planning were the topics of a September week-long energy sector workshop in Cote d'Ivoire. Ministry and energy department managers from nine African countries discussed national and regional power sector issues and improving efficiency in their countries. EI supported REDSO/WCA, which cosponsored the workshop with the African Development Bank. ■ EI organized a visit for two officials of the India-based Program for Accelerating Commercial Energy Research (PACER). As a result, 10 projects for the U.S. private sector were identified for potential PACER support. The projects could involve biomass gasification, the use of high ash Indian coals, and technologies for energy efficiency. The pilot projects' total estimated cost is \$19.5 million. ■ A 20-megawatt sugar cane cogeneration plant in the Philippines has good com-

mercial potential, according to an EI-supported prefeasibility study. One U.S. company plans to fuel the plant with sugarcane pulp and field trash to provide power for a sugar mill and nearby industries. Instead of preharvest sugarcane burning, harvesting will be done by hand. This allows field trash baling for fuel, generates jobs and income opportunities for local farmers, and reduces negative environmental effects. ■ In July, the Mexican government hosted its first international electricity cogeneration conference and exposition. The United States has a global lead in developing these technologies, which save fuel and reduce carbon emissions. The effort cultivates a market estimated at \$5 billion in U.S. business opportunities. EI is helping U.S. companies enter the market through the Mexico Business and Development Initiative in Energy and Environment. ■ **Compania Palma Tica**, a subsidiary of Chiquita Brands International, plans to generate 3 million kilowatt hours of electricity per year from palm fruit wastes. This would power the company's milling operations, with surplus to sell to the national utility. EI is co-funding the feasibility study with a Costa Rican company for two biomass power projects. The Renewable Energy Project Support Office in San Jose and USAID/Costa Rica helped choose the study for cost sharing. ■ A team of power specialists from the Office of Energy are helping the Armenian government design and build a unit of the Hrazdan Power Plant. They will introduce innovative engineering techniques, procedures, and equipment to improve energy efficiency and reduce the plant's environmental impact. ■ Guatemala's national electricity distribution utility is creating a new division for designing and implementing energy-efficiency programs. The unit will address Demand-Side Management (DSM), a type of efficiency management based on patterns of end-user electricity consumption. EI has aided power-sector efficiency in Guatemala for the past year to prioritize DSM conservation measures

and establish an implementation plan. EI estimates a national DSM program could save 20 percent (100 MW) of peak electricity demand by the year 2010.

Environment Representatives from several Guatemalan PVOs completed a week-long training session conducted by the Water and Sanitation for Health project. The session offered guidelines for evaluating the environmental impacts of small water and sanitation projects PVOs might undertake with USAID support. The guidelines describe a four-step process for identifying, studying, and addressing negative results from such projects. This is part of an overall USAID effort to ensure that all funded projects are environmentally sound. ■ Land tenure policies can be key to improving natural forest management, according to experts at a workshop organized through two EID projects. The goal was to present comparative case studies of Resource Management Areas (such as parks and protected reserves) and develop a research agenda linking tenure policy and forest management. Participants suggested USAID examine the impact of tenure security on investment by private sector companies in conservation measures; the effects of tenure patterns in agriculture, including distribution and security, on forest conversion; and agreements by free trade associations in national policies. ■ In response to requests from the Bulgarian Ministry of the Environment, the Biodiversity Support Program is gathering background information on the status of Bulgaria's biological resources, planning a workshop for local and international experts, and drafting a national strategy for conserving biological resources. The strategy will guide public, private, and NGO efforts. ■ The world's fishery harvest—100 million metric tons in 1990—is declining as a result of mismanagement and overharvesting. The harvest is at the maximum sustainable yield, according to the Food and Agriculture Organization (FAO). Unless coastal nations take immediate

corrective measures, the world faces an inability to provide high-value, quality protein for basic food needs and export. USAID identified coastal zones as a critical environmental area, and the Fisheries Stock Assessment CRSP has developed management techniques for coastal nations. The CRSP is drafting a manual for decision-makers and in 1993 will hold discussion and training workshops on sustainable fisheries in Costa Rica and the Philippines.

Health and Nutrition USAID is extending its successful Latin American and Caribbean AIDS hotline to Africa and Asia. Swaziland was the first country in sub-Saharan Africa, outside South Africa, to initiate the program. The AIDSCOM project expanded the hotline to the Philippines and Indonesia. Such efforts include counseling, collecting data, and developing a policy to ensure confidentiality. Through AIDSCOM, USAID developed and supported many hotline projects, including programs in El Salvador, Peru, Brazil, Colombia, Ecuador, Grenada, Jamaica, Trinidad and Tobago, St. Lucia, St. Vincent, and the Dominican Republic. With technical assistance and funding for such programs, USAID is the primary supporter of AIDS hotline programs in the developing world. ■ An interdisciplinary team of scientists with the International Potato Center (CIP) is working with scientists at the Kenya Ministry of Agriculture to prevent famine and help Kenya feed itself. They see increased, improved sweet potato production as a valuable key. Kenya is in the middle of a drought and its staple food, white corn, is depleted. If Kenyan farmers planted more sweet potatoes they might have enough to tide them over until the next rains. Sweet potatoes thrive when maize and other cereal crops fail. CIP is building on past experience in India, Peru, and Burundi to encourage village people to grow, consume, and process sweet potatoes into forms that last longer and are easily sold. The Kenya Agricultural Research Institute is experimenting with sweet potato

flour for baking. The team believes that farmers who grow the crop will earn money while simultaneously raising a fodder crop. ■ The Office of Nutrition and UNICEF are collaborating to produce a 30-minute video on micronutrient deficiencies, *Ending Hidden Hunger*, that promotes awareness of the problem and offers solutions. It will be produced in English, French, and Spanish, and previewed at the December International Conference on Nutrition in Rome. ■ Scientists at the International Institute for Tropical Agriculture have developed a high-yielding strain of cassava that can survive African drought conditions and could fight famine. They crossed cassava varieties with a wild species to produce a "super" cassava with up to four times the normal number of chromosomes and with yields four times that of traditional cassava. The new variety could help southern Africa by supplanting maize, which is highly vulnerable to drought. ■ USAID is supporting a study of adolescent girls' nutrition in 10 developing countries, conducted by the International Center for Research on Women. Results should help reveal the impact of menstruation on female secondary school drop-out rates. Much research has been done on economic, social, and school-based reasons for women leaving school, but the impact of female maturation has not been carefully reviewed. World Bank is funding complementary research.

Population *Alo Guisella*, Peru's most popular TV program among female audiences, is promoting sexual responsibility. APROPO, a private health marketing and communication organization in Peru, convinced *Alo Guisella* to incorporate social messages into its commercial programming. In July, a two-hour special *Alo Guisella* opened with a tribute to the 1987 hit, *Cuando Estemos Juntos* (When We are Together), made popular by vocal artists Tatiana & Johnny and produced by the Johns Hopkins University Population Communication Services (JHU/PCS). Plans are underway to

turn *Alo Guisella* into a Latin American regional program. JHU/PCS is helping APROPO design and implement communication efforts. ■ The Food and Drug Administration (FDA) approved Depo-Provera as a contraceptive in the United States. The three-month injectable contraceptive very effectively prevents pregnancy. FDA approval should increase the already high demand for Depo-Provera and family planning, and prompt approvals and a lifting of restrictions in other countries, but it will be several months before USAID can offer the contraceptive in family planning programs. ■ Family Health International and Wisconsin Pharmacal Co. signed an agreement on the Reality Female Condom, a barrier-method polyurethane sheath that protects against pregnancy and sexually transmitted diseases, including HIV. In return for \$1.5 million in USAID safety trials, the agreement gives the public sector a preferential price and provides for royalties on private-sector sales. The product is being sold in Europe; FDA approval is expected soon.

Women The Office of Women in Development and the Bureau for Europe co-sponsored a conference, *The Role of Women and the Transition to Democracy in Central and Eastern Europe*, in Strasbourg, France. The gathering brought together for the first time women elected officials from Europe and the United States. Its goal was to counsel women from former communist countries who seek elected political office. USAID funded 24 Europeans and six Americans.

Drug Awareness Participants in the Narcotics Awareness and Education Project (NAEP), hard at work in Latin America and the Caribbean, completed a five-day community drug prevention training workshop in Mexico. Participants from USAID-funded programs in several communities received a new six-step planning process for implementing and evaluating antidrug programs. ■ In September in the Dominican Republic, an NAEP team designed and

supervised a nationwide study of drug use prevention messages. Dramatic, realistic presentations were most effective in tailoring the antidrug message. Study results are available to drug prevention agencies. ■ With technical assistance from NEAP, Bolivia's National Drug Prevention Directorate completed field work for an ethnographic study of drug use among street children in three major urban areas. Teams of ethnographers conducted focus groups and collected life histories of street children who use inhalants or cocaine. Results will contribute to the design of drug abuse prevention programs. NEAP also conducted a five-day training course on the use of computer software for data analysis in combating drug abuse. The course allowed participants to use data contained in the USAID-supported Bolivian National Survey of Drug Prevalence and Attitudes.

Updates

Office of Women in Development (WID): WID is helping the Jordanian National Women's Commission at the request of Her Royal Highness Princess Basma Bint Talal. The Commission consists of ministers for planning, finance, health, labor, and education; Jordanian women leaders; and leading academics. Working together, WID and the Commission designed a national strategy for women that aims to increase women's participation in the labor force, strengthen their political participation, improve their legal and

INNOVATIONS

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political rights and their social welfare, and address social constraints to their full economic and political participation. The strategy calls for cooperation among the government, the private sector, and universities.

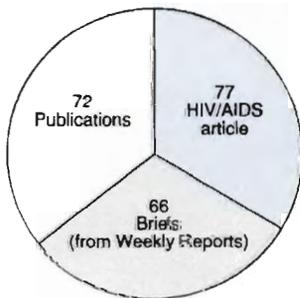
Economic Opportunities for Women in Former USSR: R&D/WID in collaboration with PRE/SMIE GEMINI Project undertook a study of small enterprise opportunities in Vladivostok in the Russian Far East. In the current transition period to a market economy, women appear to be losing jobs faster than men, especially in the fields of scientific research, engineering, and small public enterprises in the services sector. At present, 75 percent of the registered unemployed are women. To cope with rising unemployment, some women have already started establishing their own small businesses. At present 20 percent of newly registered firms are managed by women. Similar studies are planned in four other republics within the NIS. After these assessments, a small enterprise project will

be designed that will promote opportunities for women entrepreneurs.

Operation Restore Hope Considers Somali Women's Precarious Situation: R&D/WID is working with the STATE/USAID Somalia Task Force and OFDA to ensure U.S. forces in Somalia understand dangers faced by Somali women during the present crisis. With famine and the influx of Western troops, Somali women face increased dangers as a result of cultural disruptions and family separations. Following media reports of a Somali woman being beaten by a mob of Somalis after being accused of consorting with French soldiers, R&D/WID worked strategically to incorporate gender concerns into military training and guidance for *Operation Restore Hope*. Representatives of OFDA, DoD, STATE/PM, and other offices have been open to the process. Andrew Natsios, special coordinator of the U.S. relief effort, worked to incorporate gender concerns into training for Somalia-bound Civil Defense Forces. Collaboration continues.

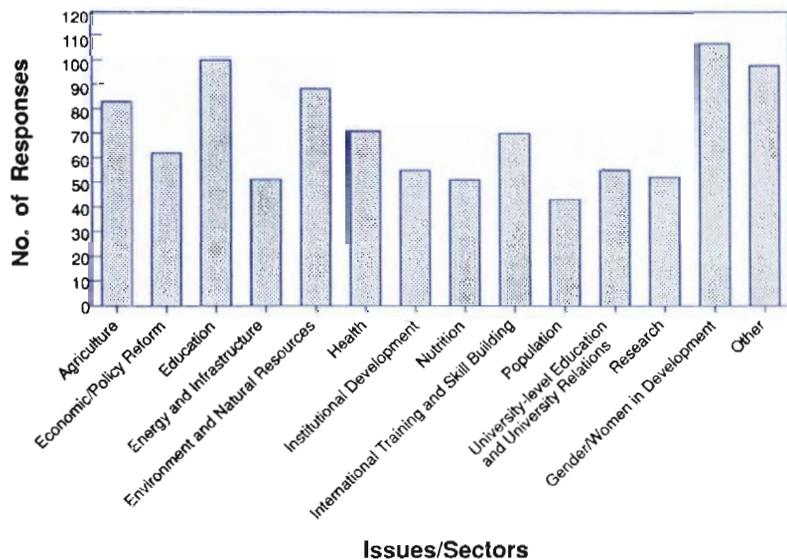
The Office of International Training (OIT): OIT hosted the 1992 Combined Training Officers and Contractors Workshop in Annapolis, Maryland, November 17-22 as part of USAID Week in Maryland. At the conference, *Trained Women—Building Capacity for Development*, more than 250 attendees included 43 training representatives from 33 USAID missions. This was the first time contractors, mission training staff, host government officials, and U.S. educational community members met as a group to discuss USAID's Participant Training Program and its U.S. component, the Thomas Jefferson Fellowship Program. Many recommendations were recorded for OIT, mission and contractor consideration, and action for increasing numbers of women in training and their impact on the development process. For copies of workshop minutes, contact USAID R&D/OIT/PETA, SA-16, Room 210, Washington D.C. 20523-1601. ■

What sections were most useful?



(Total responses = 215)

Which issues do you want covered?



Reader responses to questionnaire included in mailing of about 4,200 copies of *Innovations*, Issue No. 2, Fall 1992. Survey was not "scientific" and responses undoubtedly are influenced by the choice of mailing lists used. Most non-AID lists were from a master list used by the Agency's Office of External Affairs. Other lists included non-AID readers of the Agency's "Front Lines" and the full list from the R&D Bureau's University Center newsletter, "BIFADEC Briefs." Copies also were sent to USAID missions, heads of USAID offices, and a list of USAID/Washington professional staff. Survey primarily was intended to provide a "reader preference" overview and a chance to add or correct addresses. Readers returned more than 570 survey forms.