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*Cover: A Salvadoran farmer listens intently at a small farmer association meeting.
Local institutions are an important means toward sustainable development.
(Credit: Agency for International Development)*

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QUESTIONS AND ANSWERS ABOUT ARDA

What is ARDA?	ARDA, "A.I.D. Research and Development Abstracts", is a quarterly abstract journal issued by the Division of Development Information, Center for Development Information and Evaluation, Bureau for Program and Policy Coordination.
What is the goal of ARDA?	The goal of ARDA is to transfer development and technical information to active practitioners in development assistance.
For whom is ARDA published?	ARDA's target audience is A.I.D. staff world wide and selected key institutions in developing countries. Such institutions are government agencies, universities, libraries, research organizations, and other public and private sector organizations.
What material are abstracted in ARDA?	ARDA presents abstracts of AID-funded current and less recent research studies, state-of-the-art reports, sector analyses, special evaluations, and other documents which, taken together, describe a broad spectrum of international development experience.
To whom do I address additional questions regarding ARDA?	Please direct all correspondence and requests for further information to: Editor of ARDA PPC/CDIE/DI Agency for International Development Washington, D.C. 20523 U.S.A.

QUESTIONS ET REPONSES RELATIVES A ARDA

Qu'est-ce qu'ARDA?	ARDA, "A.I.D. Research and Development Abstracts", (Résumés sur la recherche et le développement de l'Agence pour le Développement International), est une revue trimestrielle composée de résumés publiée par la Division de l'Information sur le Développement, Centre d'Information et Dévaluation du Développement, Bureau de Coordination de Programmes et Politiques.
Quel est l'objectif d'ARDA?	Le but d'ARDA est de transmettre des informations techniques sur le développement à ceux qui prêtent assistance au développement.
A qui s'adresse ARDA?	ARDA s'adresse au personnel d'A.I.D. dans le monde entier et à certaines institutions clés situées dans les pays en voie de développement. Ces institutions comprennent des agences de gouvernement, des universités, des bibliothèques, des organisations de recherche, et d'autres organisations dans les secteurs publics et privés.
Que contiennent les résumés d'ARDA?	ARDA présente des résumés des recherches actuelles et moins récentes financées par A.I.D., des rapports sur l'état actuel du développement, des analyses de différents domaines, des évaluations spéciales, et d'autres documents. Le tout ensemble décrivent une vaste étendue d'expériences dans le domaine du développement international.
A qui est-ce qu'il faut poser des questions supplémentaires au sujet d'ARDA?	Veuillez envoyer toute correspondance et toute demande de plus amples renseignements à: Editor of ARDA PPC/CDIE/DI Agency for International Development Washington, D.C. 20523 U.S.A.

PREGUNTAS Y RESPUESTAS SOBRE ARDA

¿Qué es ARDA?	ARDA, "A.I.D. Research and Development Abstracts", (Sumarios de Investigación y Desarrollo de A.I.D.) es un revista que sale cuatro veces al año, publicado por la División de Información sobre el Desarrollo, Centro de Información y de Evaluación del Desarrollo, Departamento de Coordinación de Programas y Políticas.
¿Cuál es el objetivo de ARDA?	El objetivo de ARDA es suministrar información técnica y sobre el desarrollo a los participantes activos en las actividades del desarrollo.
¿Para quién se publica ARDA?	ARDA se dirige al personal mundial de A.I.D. y a seleccionadas instituciones claves de los países en desarrollo. Tales instituciones cuentan con agencias de gobierno, universidades, bibliotecas, organizaciones de investigación, y otras organizaciones de los sectores público y privado.
¿Qué contienen los informes de ARDA?	ARDA presenta resúmenes de estudios actuales y menos recientes financiados por A.I.D. relativos a la investigación, informes sobre el estado del arte, análisis de sectores, de evaluaciones especiales, y otros documentos, que en conjunto describen un amplio panorama de experiencias dentro del campo del desarrollo internacional.
¿A quién se dirigen preguntas adicionales sobre ARDA?	Sírvase remitir toda la correspondencia y los pedidos de más información a: Editor of ARDA PPC/CDIE/DI Agency for International Development Washington, D.C. 20523 U.S.A.

USER'S GUIDE TO ARDA CITATIONS

Item number	055	*PN-ABC-681	Document number
		MF \$2.16/PC \$14.95	Microfiche/paper copy prices
Title	Tilapia genetic resources for aquaculture : proceedings of the workshop on tilapia genetic resources for aquaculture, 23-24 March 1987, Bangkok, Thailand		
Author (s)	Pullin, R.S.V., ed.		
Institutions	International Center for Living Aquatic Resources Management U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture (Sponsor)		
Meeting	(Workshop on Tilapia Genetic Resources for Aquaculture, Bangkok, TH, 23-24 Mar 1987)		
Supplementary notes	1988, v, 108p. : ill., maps, statistical tables, En	Serial title (if any), date, pagination, language	
	ICLARM contribution no.457		
	ICLARM conference proceedings, no.16		
Project number	9311050		
Availability note	<i>*Also available from: International Center for Living Aquatic Resources Management, MC P.O. Box 1501, Makati, Metro Manila, Philippines</i>		

Tilapia are African fish that are used in warmwater aquaculture throughout the world. Some species, such as the Nile tilapia (*Oreochromis niloticus*), are highly versatile, herbivorous-microphagous feeders well suited to low technology farming systems. However, tilapia culture outside of Africa is based on a narrow genetic base taken from a few founder populations, while Africa itself, which possesses a wealth of tilapia genetic resources, is hard pressed in developing these resources for aquaculture and in conserving wild tilapia populations, many of which are threatened by irreversible change or loss. A variety of issues cognate to this situation were discussed at an international symposium held in March, 1987. These proceedings contain formal presentations on: (1) tilapia resources in Africa in general (two papers); (2) wild and cultured tilapia genetic resources in Africa (Cameroon, Ivory Coast, Ghana, Madagascar, Malawi, Zimbabwe) and elsewhere (Philippines, Thailand, Singapore and Malaysia, Israel, the United States); (3) methods used in tilapia identification and genetic research (six papers); and (4) gene banks and culture collections (two papers).

Abstract

001

PN-AAX-217
MF \$1.08/PC \$6.37

Small-farmer attitudes and aspirations

Kusterer, Ken

U.S. Agency for International Development. Bureau for Program and Policy Coordination. Center for Development Information and Evaluation

Jun 1989, 26p. + 2 appendices, En

A.I.D. program evaluation discussion paper, no.26

Conventional wisdom considers small farmers to be tied to their land, resistant to change, and influenced as much by tradition as by reason. In the countering view of the present study, a reflective summary of unpublished studies (mostly Ph.D. dissertations) of small farmers' attitudes toward economic development, small farmers appear eager to improve their status by entering the market economy—

The small farm household was found to be a complex and diversified economic enterprise, subsistence farming being only one of many productive activities.

they are the microentrepreneurs of rural areas. The small-farm household, which emerged as the proper unit of analysis, was found to be a complex and diversified economic enterprise, subsistence farming being only one of many productive activities. In making economic decisions, small farmers appear to be driven by goals which are hierarchically structured. The basic level is the establishment of their household base through subsistence production, while the highest is the securement of an independent income for all adult household members. Although tradition is important, small farmers take risks appropriate to their situation, protecting their current position in order to advance to the next level. Thus, from the perspective of the small farm householder, economic development ultimately means transcending small-farmer status, either by becoming a large farmer or, more often, by becoming a part-time farmer whose primary economic activity is elsewhere. The final section of the report makes recommendations for considering these aspirations in the design of economic development projects aimed at small farmers.

002

PN-AAX-218
MF \$1.08/PC \$7.54

Methodologies for assessing the impact of agricultural and rural development projects : a dialogue

Kumar, Krishna

U.S. Agency for International Development. Bureau for Program and Policy Coordination. Center for Development Information and Evaluation

Jun 1989, viii, 24p. + 2 appendices, En

A.I.D. program design and evaluation methodology report, no.11

In January 1988, A.I.D. sponsored an international workshop to discuss key issues concerning impact assessments of agricultural and rural development projects. Major findings and conclusions were as follows.

1. Current strategies for computing the net impacts of agricultural and rural development projects—statistical control and quasi-experimental design techniques—are impractical and should be replaced by rapid, low-cost data collection methods (e.g., informant interviews, community meetings, surveys) to determine whether anticipated or unanticipated change occurred in core impact areas, and whether these changes can plausibly be related to the project.

2. Production impact should be assessed by examining not only a project's impacts on targeted crops, but also the project's effect on non-targeted crops and activities, the use of the targeted crop, the persons responsible for production and marketing, the cost opportunity of the new crop, and gender issues.

3. Impact on household income can be assessed by conducting small, sample surveys for extended periods of time. These surveys should focus on household expenditures, key standard-of-living indicators, and intrahousehold control of income.

4. Besides food production, factors such as seasonality, crop mix, income, the role of women, crop labor requirements, marketing, and government policy are vital in assessing the attainment of food consumption objectives. Nutritional impact can be measured by simple and easily learned anthropometric methods. Also pertinent are questions about the frequency of meals consumed during dif-

GENERAL DEVELOPMENT

ferent agricultural seasons and the number of nights the respondent or his/her acquaintances went to bed hungry.

5. Agreement is lacking among scientists and donors on suitable models for assessing project impact on natural resources and the environment. Such models, when developed, should include not only biological and physical aspects, but social and economic aspects as well. Excessive use of technical language and evaluators' sense of their inability to affect environmental issues are also problems.

6. More needs to be done to devolve assessment efforts to host country agencies, building, where necessary, the required institutional capacity.

003

PN-AAX-220

MF \$1.08/PC \$9.75

Effectiveness and economic development impact of policy-based cash transfer programs : the case of Jamaica, 1981-1987

Allen, Richmond; Hermann, Chris; et al.

U.S. Agency for International Development. Bureau for Program and Policy Coordination. Center for Development Information and Evaluation

Jun 1989, xv, 58p. : charts, statistical tables, En
A.I.D. evaluation special study, no.62

From 1973 to 1980, Jamaica underwent severe economic decline as a result of protectionist economic policies and greatly expanded social service programs. In response, in 1981 A.I.D. initiated a cash transfer program which provided \$396 million over a six-year period as support for economic stabilization and structural adjustment efforts. The program focused on reducing government involvement in commercial enterprises and in production and investment decisions, maximizing the role of the private sector in national development, and encouraging export-led growth.

According to this evaluation, the Government of Jamaica achieved many, although not all, of the policy reform goals. Major achievements were: (1) the development of a simplified and equitable tax system; (2) privatization of a broad array of public sector enterprises; (3) deregulation of export marketing organizations, leading to increased investments in the banana, coffee, and

citrus industries; (4) reduction of subsidies and elimination of commodity price controls; (5) reduction of quantitative import restrictions; and (6) the doubling of nontraditional exports to countries outside the Caribbean Common Market. A negative result of the economic stabilization program, however, has been the deterioration of Jamaican living standards and social services. According to the report, these conditions were made even more severe by the Government of Jamaica's slowness in implementing economic stabilization policies. Serious efforts to make the exchange rate more competitive and to reduce central government expenditures were delayed until 1985, which only increased the strain on the poorest segments of the population. Three major lessons were learned. (1) Certain implementation requirements of structural adjustment and policy reform programs may be better addressed through project rather than program modes of assistance. (2) Cross-conditionality between two A.I.D. programs is likely to magnify problems that arise within either program. (3) Coordination and complementarity across the A.I.D. portfolio contribute to the policy dialogue and reform process.

004

PN-ABB-829

MF \$1.08/PC \$2.08

Issues of aging in developing countries : recommendations of the Research Advisory Committee to A.I.D., meeting of January 15, 1988

U.S. Agency for International Development. Bureau for Science and Technology. Office of Research and University Relations

(Meeting of the Research Advisory Committee to A.I.D., Washington, DC, US, 15 Jan 1988)
23 Feb 1988, 13p., En

The projected doubling of the elderly population in many Asian, Latin American, and Caribbean countries in the next 25 years will have a significant impact on social and economic development. This paper endorses establishment of an A.I.D. research program on aging in order to anticipate the positive and negative consequences of this trend. Both macro- and micro-level research are advocated. The results of the former would aid policymakers in resource allocation, while the latter is essential to design-

ing appropriate interventions and identifying priorities for future macro-level research. More specifically, the paper recommends that macro-level studies be conducted on the effects of aging on economic development and on the agricultural sector. Micro-level research should focus on the elderly population's health status and risk factors, family and community relations, and economic needs and resources. While research should receive the bulk of A.I.D. support, information dissemination and researcher training should also be provided. Collaboration with host country researchers will be necessary to tailor programs to local situations.

005 **PN-ABC-412**
MF \$1.08/PC \$7.54

Agricultural research and technology in the 1990's in Asia and the Near East : trends and possible strategies for A.I.D.

Pray, Carl E.
Rutgers University
U.S. Agency for International Development. Bureau for Asia and Near East. Office of Technical Resources (Sponsor)
(ANE/TR/ARD Strategy Symposium on Agriculture in the 1990's, Rosslyn, VA, US, 7-9 Sep 1988)
Aug 1988, 59p. : statistical tables, En

Although investments in agricultural research by Asian and Near East countries have historically yielded a high rate of return, regional expenditures in this field are still relatively low. National agricultural research systems spend too little on major food grain and subsistence crop research, while private sector agricultural research, though expanding rapidly, still lags behind government research in most crops. Faced with this situation, A.I.D. in the 1990's should concentrate on countries which have low agricultural research expenditure to agricultural GDP ratios, such as Burma and the Philippines and, within countries, on favorable agricultural regions. Research should focus on technical opportunities to increase productivity in basic foodgrains (especially in South Asia), as well as on resource and environmental issues. Adaptive research, which tailors technology to farmers' needs, along with "strategic research" (e.g., applying biotechnology to breed-

ing stress-resistant crops) should receive the most attention. Support for agricultural research institutions—private, governmental, and international—should be tailored to their respective objectives. To implement these priorities, A.I.D. should adopt a strategy to: (1) encourage more participation in research priority setting by farmers and agribusiness; (2) support more basic research by financing joint activities and improving communication among scientists; and (3) promote private sector agricultural research.

006 **PN-ABC-491**
MF \$1.08/PC \$8.71

University linkages in science and technology for the Asia and Near East Bureau

Seymour, Matt
U.S. Agency for International Development. Bureau for Africa. Office of Technical Resources
17 Jun 1988, vi, 60p., En
3980249

University linkages can play a key role in improving higher education in developing countries, especially in the fields of science and technology. This paper, based on a review of A.I.D. impact evaluations and final project evaluations of institution-building projects carried out in the Asia/Near East region, focuses on two kinds of linkages: "internal" (in which a host country and a U.S. university work together to improve teaching, research, and outreach in both) and "external" (typically, an agreement between a host country university and a productive public or private sector institution to work jointly to develop a product or service). Several lessons emerged from the review. (1) To effectively assist host country universities, A.I.D. and U.S. universities must make long-term commitments to linkages. (2) Individual leadership and the quality of interpersonal relationships play an important role in the success or failure of linkages. (3) Organizational flexibility and innovation are encouraged in linkage arrangements. (4) Host country institutions need political support from the central government in order to be proactive institutions and to develop effective external linkages. (5) Internal accountability and external pressure

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groups can accelerate the development of external linkages. (6) The sustainability of linkages is related to six factors, namely, favorable government conditions, trust, autonomy, an entrepreneurial approach, quality standards, and a "demand-driven" awareness.

007

PN-ABC-534

MF \$1.08/PC \$7.93

Negotiating and programming food aid : lessons from experience—final report on results of five evaluative case studies

Morton, Alice; Newberg, Richard R.
U.S. Agency for International Development. Bureau for
Food for Peace and Voluntary Assistance
Feb 1989, x, 26p. + appendix, En
[A.I.D.] working paper, no.122

Case studies were conducted of apparently successful P.L. 480—especially Title I—programs in Zambia, Haiti, Pakistan, Tunisia, and Mali to examine (a) the process of identifying and implementing self-help provisions and (b) the programming of local currency proceeds. Major findings were as follows.

Self-help provisions. (1) As the programs in Haiti and Pakistan indicate, experienced A.I.D. foreign service nationals should play a major role in monitoring and evaluating self-help provisions, with short-term help, where needed, from U.S. or host government staff or from consultants. (2) P.L. 480 self-help measures should be integrated as far as possible with the policy implications of other Mission projects in order to facilitate policy reform at the sectoral level. (3) Other donors must encourage the host government to achieve self-help objectives, as in the case of the Mali multi-donor cereals program. (4) Host country officials should be given whatever help they need to report accurately on self-help provisions. Such reporting should be timed to fit the schedule of the host, not the U.S., government.

Local currency proceeds. (1) Large amounts of local currency proceeds can cause programming problems, especially for the host government. In such cases, management of the proceeds should be kept as simple as possible, as in the case of Pakistan. (2) Reporting requirements

should be adapted to host government accounting and budgeting procedures. (3) Special accounts should not be required on the assumption that they will facilitate greater accountability. (4) Early joint programming of funds is preferable to post-negotiation programming. (5) Management difficulties often make the use of local currency proceeds to meet the 25% host government counterpart requirement impractical, as in Haiti. (6) More creative use should be made of local currency proceeds to support other donor efforts that reinforce A.I.D. policy reform goals. (7) USAID's should make greater use of local currency proceeds to help finance the implementation of self-help measures.

The report also includes lessons for policy dialogue and recommendations for improving the P.L. 480 program. Executive summaries of the case studies are appended.

008

PN-ABD-171

MF \$2.16/PC \$15.86

Development issues 1989 : U.S. actions affecting developing countries—the 1989 annual report of the Chairman of the Development Coordination Committee

Woods, Alan
U.S. International Development Cooperation Agency
U.S. Development Coordination Committee
1989, 114p. : statistical tables, En

The U.S. strategy for encouraging broad-based economic growth and development in the Third World is outlined in this annual report of the Development Coordination Committee. Chapter I summarizes the priorities and objectives of U.S. economic assistance, while Chapter II provides information on the relationship between economic policy and growth. In Chapter III, major world economic issues, such as the general economic environment, U.S. trade policy, external indebtedness, and private direct investment, are discussed as they relate to Third World development. A.I.D.'s successes and failures are identified in Chapter IV, with reference to projects in food and agriculture; human resources; energy, environment, and natural resources; institutions and housing; private enterprise; disaster and refugees; and evaluation. Chapter

enterprise; disaster and refugees; and evaluation. Chapter V covers U.S. programs to promote growth, including: (1) bilateral assistance (i.e., development aid, the Economic Support Fund, Public Law 480 and food aid, and the Board for International Food and Agricultural Development); (2) the Overseas Private Investment Corporation; (3) the Peace Corps; (4) private voluntary organizations; (5) the U.S. trade and development program, and (6) programs in support of regional development foundations (i.e., the Inter-American Foundation and the African Development Foundation). Chapter VI covers U.S. support of multilateral programs, including the United Nations, inter-American organizations, the Development Assistance Committee, and multilateral development banks.

009

PN-ABD-064
MF \$2.16/PC \$16.51

A.I.D. food policy programming : lessons learned—an assessment of the 'consumption effects of agricultural policies' project, 1977–1988

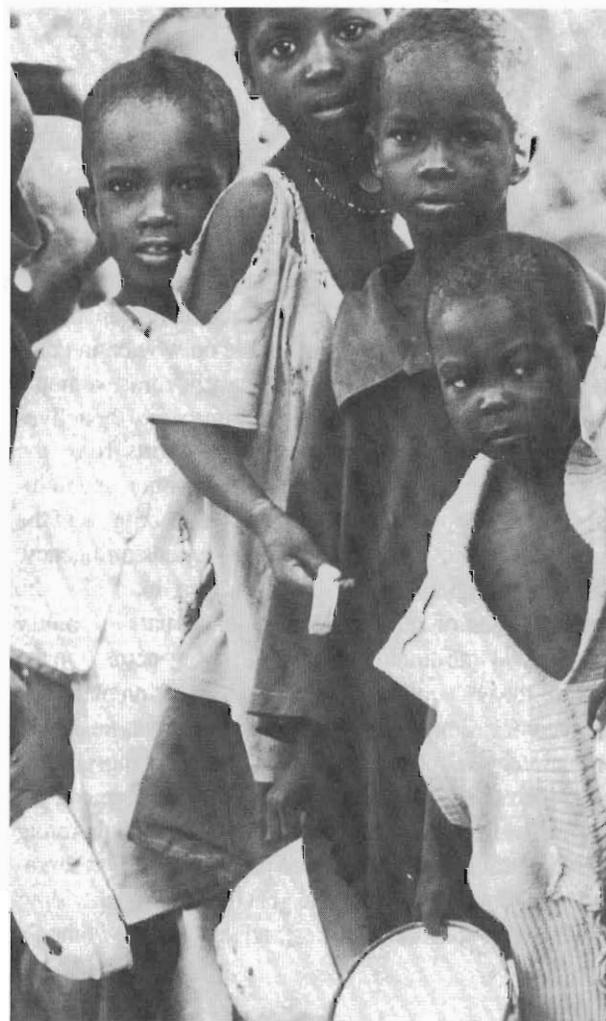
Kramer, Carol S.; Rubey, Lawrence M.
Resources for the Future, Inc.

U.S. Dept. of Agriculture. Office of International Cooperation and Development. Technical Assistance Division (Sponsor)

U.S. Agency for International Development. Bureau for Science and Technology. Office of Nutrition (Sponsor)
Aug 1989, vi, 117p. : charts, En
9311274

A.I.D.'s Consumption Effects of Agricultural Policies (CEAP) project was designed to study the links between agricultural policies, food consumption, and nutrition. From 1977 to 1988, the project conducted research and policy studies, technical assistance, and training activities in about 30 countries. A major emphasis of these activities was to determine the impact of food policies on the poor. This assessment of the project identifies lessons drawn from CEAP country studies, which focused on producer and consumer price policies; food subsidies; input, technology, and marketing policies; and macroeconomic and trade policies. It also identifies lessons relating to research

design, food policy analysis, technical assistance, training, and project management and administration. A major lesson is that accurate data on consumption parameters can dispel traditional wisdom and promote better policy design. For example, it was discovered that policies to induce coarse grain consumption by increasing rice prices are misguided, since consumers respond to the price hikes by reducing their overall grain consumption. The report concludes with recommendations for future A.I.D. activities related to food policy, with special attention to developing policies and interventions to assist groups vulnerable to the adverse impacts of structural adjustment programs. Abstracts of the 17 CEAP country studies are included.



Understanding the link between food subsidy policies and the nutritional status of the poor is a vital element in successful food policy programming.

WOMEN IN DEVELOPMENT

010

PN-ABC-332
MF \$2.16/PC \$14.30

Rural women in Pakistan farming systems research : proceedings of the workshop on role of rural women in farming systems research, Islamabad, January 12-14, 1988

Pakistan. Agricultural Research Council
U.S. Agency for International Development. Bureau for Asia and Near East. Pakistan (Sponsor)
(Workshop on Role of Rural Women in Farming Systems Research, Islamabad, PK, 12-14 Jan 1988)
1988, 95p. : ill., statistical tables, En

The marked progress in Pakistan's agricultural productivity following the Green Revolution has not brought about a commensurate improvement in the status of rural women. Studies on poverty, illiteracy, and nutrition indicate that women's welfare has either remained backward or has regressed even further. This volume contains papers presented at the first workshop ever held on women in Pakistani agriculture. Initial papers analyze rural women's current role and the potential for improving their lives through farming systems research. Reports from the provinces of Punjab, Sind, North-West Frontier, and Baluchistan are then presented, followed by a description of the Farm Guide Movement, a voluntary extension agency. Subsequent papers and abstracts discuss, inter alia, the training needs of rural women and their part in poultry farming and traditional irrigated farming systems. On the basis of ideas shared at the workshop, an action plan for a two-year farming systems research project was designed. The strategy involves conducting basic diagnostic surveys; identifying problems in livestock management; assessing the training needs of volunteers and collaborating agencies; training women in food processing and preservation, rural poultry farming, and goat husbandry; providing women with extension services; and establishing women's cooperatives.

011

PN-ABC-396
MF \$1.08/PC \$9.49

Women in rural-urban exchange : implications for research and intervention identification

Downing, Jeanne; Santer, Jennifer
Clark University. International Development Program
Institute for Development Anthropology, Inc.
U.S. Agency for International Development. Bureau for Science and Technology. Office of Rural and Institutional Development (Sponsor)
U.S. Agency for International Development. Office of Women in Development (Sponsor)
3 Feb 1989, iv, 64p., En
Bibliography: pp.57-64
9311135

A study of marketing activities in the Kutus region of Kenya reveals differences between male and female marketers that have significant implications for rural development planning. One of the most significant variances lies in the mobility of marketers. Males travel more than two and a half times as far as females to purchase inputs and are much more likely to operate in markets outside Kutus. Females, being largely responsible for the household and family farm, are constrained primarily to local markets for both selling and purchasing activities. Although this constraint limits female earnings, women's local spending patterns are critical to regional employment and enterprise opportunities. Conversely, while male marketers generate larger revenues (200% more than females), their non-local spending represents a loss of potential income to the region. Additional variances identified by the report include commodity type (most women deal in food-related commodities, while most males sell non-food items) and the amount of start-up capital (males' exceeds females' by over 250%). According to the report, development interventions should respond to the different needs of male and female marketers; road investments, for example, should not be targeted toward the marketing of crops produced predominantly by males. Guidelines are provided for incorporating gender analysis into A.I.D.'s research framework for rural-urban exchange (RUE), which assesses income-generating and -multiplication processes.

012

PN-ABC-450
MF \$1.08/PC \$11.83

Gender issues in agriculture and natural resource management

Russo, Sandra; Bremer-Fox, Jennifer; et al.
Robert R. Nathan Associates, Inc.

U.S. Agency for International Development. Bureau for
Program and Policy Coordination. Office of Women
in Development (Sponsor)

Apr 1989, ix, 72p. + 2 appendices, En
Gender manual series, no.4
9300200

Women comprise the majority of the world's food producers and are involved in every type of agricultural activity. Yet despite their crucial contributions, women in developing countries have largely been denied access to the resources necessary for agricultural development (i.e., land,

capital, credit, technology, and training). This manual provides methods, guidelines, and examples for integrating women into agriculture and natural resource development projects. Through extensive use of lists and question sheets, the report identifies gender issues that should be addressed by: (1) A.I.D. programs, projects, and nonproject assistance; (2) social, economic, and technical analyses carried out during the project design stage; (3) individual project components (e.g., agricultural education and training, credit, extension, management development, and storage and processing); and (4) project implementation and monitoring systems. The manual also presents case studies describing efforts to incorporate women or gender analysis in the following areas: agribusiness in Guatemala, rice-based farming in the Philippines, dairy goat production in Kenya, agricultural research in Ecuador, bean variety testing in Colombia, and bench terracing and water conservation in Kenya. According to the report, until women are appropriately targeted by development activities, Third World food crop production may be destined to remain at current stagnant levels.



*Until women are appropriately targeted by development activities,
Third World food crop production may be destined to remain at current stagnant levels.*

013

***PN-AAZ-194**
MF \$4.32/PC \$48.62

Indian economy : recent development and future prospects

Lucas, Robert E.B.; Papanek, Gustav F.
Boston University. Center for Asian Development Studies
U.S. Agency for International Development. Bureau for
Asia and Near East. India (Sponsor)
(Conference on the Indian Economy, Boston, MA, US,
Oct 1986)

1988, ix, 374p. : charts, statistical tables, En
Westview special studies on South and Southeast Asia
Published by Westview Press
3860249

**Also available from: Westview Press, Inc.,
5500 Central Ave., Boulder, CO 80301 USA*

Although neglected in recent decades by U.S. academicians and businesspersons, India's economy remains a major force of great potential. For example, outside the centrally planned economies, India is second only to the

Since its sluggish performance through the mid-1970's, India has achieved a structural maturity in industry—largely due to the creation of a large public sector presence—and in agriculture, which has laid a strong foundation for sustained growth.

United States in its number of professional and scientific personnel. The 16 papers comprising the present volume, which stems from a 1986 conference held at Boston University to rekindle U.S. interest in the Indian economy, examine current and historical aspects of India's economic development. Areas discussed include: (1) agriculture and food; (2) employment and poverty; (3) industrial performance—controls, imports, and technology; (4) exports and foreign borrowing; (5) domestic savings, taxation, and aggregate demand; and (6) strategies for future development.

Since its sluggish performance through the mid-1970's, India has achieved a structural maturity in industry—

largely due to the creation of a large public sector presence—and in agriculture, which has laid a strong foundation for sustained growth. Current efforts at reforming economic policy to tap this potential exhibit features distinctive to India: a focus on liberalizing domestic industry rather than foreign trade, as in the usual liberalization scenario; deregulation without privatization; and a gradualism commensurate with the economic system's ability to respond.

014

***PN-ABB-420**
MF \$4.32/PC \$49.27

Food subsidies in developing countries : costs, benefits, and policy options

Pinstrup-Andersen, Per, ed.
International Food Policy Research Institute
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Agriculture
(Sponsor)

1988, xvii, 374p. : charts, statistical tables, En
Published by Johns Hopkins University Press
Selected references: p.341-360

Includes index

936411114

**Also available from: Johns Hopkins University Press,
701 W. 40th St., Baltimore, MD 21211 USA*

Consumer-oriented food subsidies are used widely throughout the developing world, albeit for a diversity of objectives. Subsidy programs may aim to improve the real purchasing power of all or certain groups of consumers, reduce or eliminate calorie and nutrient deficiencies in low-income population groups, maintain low urban wages, or assure social and political stability. Part I of this report provides an overview of the major costs and benefits associated with consumer-oriented food subsidies, while Part II reviews their effect on household incomes, income distribution, food consumption, and nutritional status among low-income population groups. Implications for the agricultural sector and for foreign trade, government expenditures, inflation, and other macro-economic factors are discussed. Part II also covers related political considerations and lessons for program and policy implementation

and discusses alternatives to food subsidies. Results from country studies conducted in Egypt, the Philippines, Bangladesh, India, Pakistan, Sri Lanka, Brazil, Mexico, and Zambia are presented in Part III, while the last section discusses the implications of these findings for current and future food policies at both the micro- and macro-levels. The most important lesson emerging from the report is that consumer food subsidies can be a powerful and cost-effective policy tool to reach certain social, economic, and political goals, or they can be harmful to growth and equity. As with many other policy tools, the question is not whether consumer food subsidies are good or bad but when and how they are applied.

015

PN-ABC-434
MF \$1.08/PC \$7.54

Employment and income growth in Asia : some strategic issues

Ahmed, Rais uddin
International Food Policy Research Institute
U.S. Agency for International Development. Bureau for Asia and Near East. Office of Technical Resources (Sponsor)
(ANE/TR/ARD Strategy Symposium on Agriculture in the 1990's, Rosslyn, VA, US, 7-9 Sep 1988)
Aug 1988, 55p. : statistical tables, En

A comparison of employment and income growth over the last two decades (1965-85) in selected Asian countries shows that per capita GNP has grown much more slowly in South Asian countries (India, Pakistan, Bangladesh, and Sri Lanka) than in Southeast Asian countries (Malaysia, Indonesia, and the Philippines) or East Asian countries (Korea and Japan). Though growth in employment roughly corresponds to growth in production, there are considerable diversities among countries in sectoral employment growth. Moreover, available statistics do not reflect the degree of underemployment. Increases in average income and production seem to bear only a weak association with the alleviation of poverty.

Simultaneous success in economic growth and poverty alleviation appears quite important in developing countries of Asia. This paper argues that an appropriate development strategy is the key to this success. In the context of

the emerging agrarian structures of most Asian developing countries, particularly in South Asia, such a development strategy must give priority to agriculture and rural non-farm employment. But agriculture alone is not sufficient to reduce poverty and accelerate growth. A development strategy is needed which focuses on: (1) development of rural infrastructure, (2) generation and spread of modern agricultural technology, and (3) exploitation of international markets through macropolicy measures. Empirical evidence is presented to support these arguments. (Author abstract, modified)

016

PN-ABC-683
MF \$2.16/PC \$22.75

Background studies on East African trade

Berry, L.; Guardiano, J.; et al.
Clark University. International Development Program
Institute for Development Anthropology, Inc.
U.S. Agency for International Development. Bureau for Africa (Sponsor)
U.S. Agency for International Development. Bureau for Science and Technology. Office of Rural and Institutional Development (Sponsor)
Jan 1988, ca.150p. : ill., maps, statistical tables, En
9311135

Kenya, Tanzania, and Uganda are highlighted in this profile of trade in East Africa. Data presented in Part One, on regional trade patterns, show that, except for Kenya, the flow of goods between countries in the region is very limited, some countries having virtually no interactions within the region. The same conclusion can be reached for East African trade with the rest of Africa. Part Two considers regional trade policies, as well as policy instruments such as quotas, tariffs, export taxes, export subsidies, and voluntary export restraints. A country-by-country review illustrates the substantial dependence of East African governments on trade for tax and fee revenue. The final section of Part Two examines some trade policy problems peculiar to East Africa, particularly the relatively small amount of intra-African trade, as well as opportunities for growth through measures such as "commodity matching" between importers and exports and the devel-

opment of preferential trade areas. Part Three, an analysis of the economic characteristics of Kenya, Uganda, and Tanzania, highlights the economic dualism of the region: corridors of intense commercial activity—one extending from Nairobi to Kampala, and another to Mombasa and then along the Indian Ocean coast to Dar es Salaam—which stand in stark contrast to the moderately or sparsely populated non-corridor areas generally dependent upon subsistence agriculture. *Magendo* (informal trade) also plays a significant role in the region, particularly in areas of Uganda where the formal economy has disintegrated. (Author abstract, modified)

017 **PN-ABC-734**
MF \$1.08/PC \$8.45

Tax policy and financial intermediaries in less developed countries

Touche Ross and Co. Washington Service Center

Quick, Finan and Associates

U.S. Agency for International Development. Bureau for Program and Policy Coordination. Office of Policy Development and Program Review (Sponsor)

11 Jan 1989, 56p., En

Bibliography: p.54–56

9300092

Although financial intermediaries such as commercial and savings banks are crucial to economic growth, many developing countries actively inhibit the process of financial intermediation by imposing repressive financial policies, the most direct of which is taxation. This study examines the relationship between tax systems and financial intermediation, with emphasis on the A.I.D.-recipient countries of Botswana, Costa Rica, Jordan, and Zambia. Part I provides background information on the role and functioning of financial intermediaries in a competitive, free market environment. Part II identifies the primary ways in which financial intermediaries are taxed, while Part III provides an analytical framework for evaluating the frequently discriminatory impact of these tax systems on intermediaries. Emphasis is laid on the ways in which after-tax returns serve to allocate capital to various industries, and in which taxes act together to affect the after-tax rate of return. Recommendations in the final section of the report focus on improving these tax systems by: (1) setting

tax rates as uniformly as possible across industries and sectors, (2) eliminating transactions or turnover taxes in favor of retail sales taxes on consumption or increases in income taxes, and (3) removing controls on interest rates.

018 **PN-ABC-737**
MF \$2.16/PC \$14.56

Policy and institutional considerations in equity market development

Painter, Flora M.; Rourke, Robert J.;

Ferris, George M., Jr.

Arthur Young and Co.

U.S. Agency for International Development. Bureau for Program and Policy Coordination. Office of Policy Development and Program Review (Sponsor)

Apr 1989, x, 77p. + 2 appendices, En

9300092

In many developing countries, the inadequacy of capital markets and their equity components constitutes a major deterrent to the growth of the indigenous private enterprises. This document provides A.I.D. policymakers with a conceptual framework for evaluating capital and equity market development activities in host countries. Chapter I briefly discusses the importance of equity markets to the growth of the private sector in industrialized and developing countries, and describes the various segments of the financial markets of industrialized countries. A brief history of the activities undertaken by A.I.D. and other international donors to promote the development of financial markets is provided in Chapter II. Chapter III discusses conditions that tend to deter the growth of the private sector and the development of equity markets in the Third World. The effects of particular macroeconomic policies, political conditions, and the legal and regulatory environment on the growth of the private sector and the development of financial markets are described using examples from various countries. Chapter IV considers approaches A.I.D. might take to promote equity markets (by strengthening the institutional framework and increasing the supply of and the demand for securities), and examines the appropriateness of A.I.D. policies and resources for such assistance; included are criteria for targeting such assistance. (Author abstract, modified)

019

PN-ABC-835
MF \$1.08/PC \$12.74

Honduras : social costs of a failure to adjust

Kritz, Ernesto; Llona, Agustin; et al.
Anita F. Allen Associates, Inc.
International Science and Technology Institute, Inc.
U.S. Agency for International Development. Bureau for Latin America and the Caribbean. Regional Development Office (Sponsor)
U.S. Agency for International Development. Bureau for Latin America and the Caribbean. Honduras (Sponsor)
Oct 1988, 93p. : statistical tables, En
5970000

In an attempt to remedy its deteriorating trade situation, Honduras imposed tight foreign exchange regulations and extensive import controls in 1982. These ad hoc protectionist policies have caused extreme price distortion—especially for agricultural products—and weak economic performance, exacerbated by the government's increasing inability to stimulate internal demand. Though designed to protect the income of the population, these policies have had a detrimental impact on most social groups. Rural-urban terms of trade have substantially deteriorated and agricultural incomes have dropped, particularly for small, basic-grain producers. In urban areas, the shrinking industrial sector has caused worker lay-offs, and unemployment has risen to about 13%. These economic hard times have at least temporarily halted the progress made in the 1970's in the area of social welfare, where Honduras continues to exhibit the poorest record in Central America. While infant mortality has been substantially reduced, nutritional intake has shifted from high- to low-nutrient density foods during the past decade as a result of reduced purchasing power. With respect to education, Honduras has increased school enrollments through investments in infrastructure, but questions may be raised as to the actual quality of education. The report notes that the Honduran government was able to maintain the economic policies resulting in these social effects due to high levels of bilateral assistance, which allowed it to avoid seeking multilateral aid and thus undertaking a structural adjustment program.

020

PN-ABC-836
MF \$2.16/PC \$16.12

Costa Rica : social equity and crisis

They, Alain; Kritz, Ernesto; et al.
Anita F. Allen Associates, Inc.
International Science and Technology Institute, Inc.
U.S. Agency for International Development. Bureau for Latin America and the Caribbean. Regional Development Office (Sponsor)
U.S. Agency for International Development. Bureau for Latin America and the Caribbean. Costa Rica (Sponsor)
Jun 1988, 115p. : statistical tables, En
5970000

Costa Rica is unique among Central American nations. From the 1940's to the end of the 1970's it succeeded in combining steady economic growth and social equity. During the 1970's, the Costa Rican economy showed a remarkable ability for distributing the benefits of growth, which averaged 5.6% per year. Real wages increased while disposable income rose by a real annual rate of 6.2% between 1970-75, and 10.4% between 1975-80. During the same period, the quality of life improved dramatically as government health expenditures increased by 75% between 1969-1979. Infant mortality plummeted—from 64 per thousand in 1968-69 to 21 per thousand in 1978-79. But a reversal in the terms of trade and unrealistic levels of public sector spending pushed the economy into recession from 1980-82. Unemployment neared 10% and inflation rose sharply, reaching 90% in 1982. As prosperity diminished, however, emergency government welfare initiatives such as the "Social Compensation Program" helped protect much of the population, particularly the poorest, from the effects of economic deterioration. Despite a significant decline in real wages during the recession, average per capita food intake expanded between 1978-82 and the number of children with second-degree undernourishment dropped from 8.2% to 3.3%. In the 1980's, attempts have been made to better target and distribute social expenditures toward previously neglected coastal and frontier regions. Annexes present relevant social and economic data.

021

PN-ABC-837
MF \$2.16/PC \$15.47

Guatemala 1970–1986 : a deteriorating status quo

Thery, Alain; Kritz, Ernesto; et al.
Anita F. Allen Associates, Inc.
International Science and Technology Institute, Inc.
U.S. Agency for International Development. Bureau for Latin America and the Caribbean. Regional Development Office (Sponsor)
U.S. Agency for International Development. Bureau for Latin America and the Caribbean. Guatemala (Sponsor)
May 1988, 118p. : statistical tables, En
Cover title: Guatemala 1970–1985 : a deteriorating status quo
5970000

Despite the economic boom of 1970–78, Guatemalan society remains fundamentally unchanged. Indeed, inequalities in income and wealth actually worsened during this period. By 1981, the total income of the 5,200 richest

Despite the economic boom of 1970–78, Guatemalan society remains fundamentally unchanged. By 1981, the total income of the 5,200 richest Guatemalans was equal to that divided among the 1.8 million poorest.

Guatemalans was equal to that divided among the 1.8 million poorest. Wages have remained low, and at least 63% of the population lives below the poverty line, with almost a third classified as extremely poor. In the industrial and agricultural export sectors, low wages stem from weak labor unions and an abundant labor force, while opportunities in the traditional food production sector are limited by structural factors such as population growth and reduced labor requirements. A particularly serious index of increasing rural poverty is the growing number but dwindling size of microfincas—properties generally considered insufficient to support an average family. Rural illiteracy levels remain very high, and widespread chronic malnutrition is indicated by severe child growth retardation. Health information campaigns are impeded by lan-

guage barriers and illiteracy. All of these factors contribute to Guatemala's status as one of the least urbanized countries in the Western Hemisphere. While other countries in the region experienced rapid urban migration in the past decades, Guatemala's rural population was immobilized by a poor educational background which limited their economic opportunities in the city. However, preliminary findings indicate that Guatemala may be entering a period of structural change resulting from accelerating urban migration.

022

***PN-ABC-844**
MF \$6.48/PC \$71.50

Tax reform in developing countries

Gillis, Malcolm, ed.
U.S. Agency for International Development
(Conference on Lessons from Fundamental Tax Reform in Developing Countries, Durham, NC, US, 22–23 Apr 1988)
1989, viii, 545p. : statistical tables, En
Sereis title: Fiscal reform in the developing world
Published by Duke University Press
Includes references and index
9300095
**Also available from: Duke University Press, Box 6697 College Station, Durham, NC 27708 USA*

The pace of tax reform among developing countries has been accelerating since the mid-1970's, as a result of an almost universal recognition of the distortions and inequities created by high tax rates, years of inflation, and ineffective tax preferences. This collection of essays discusses the tax reform experiences of 10 developing nations—Chile, Uruguay, Mexico, Colombia, Indonesia, Jamaica, Sri Lanka, Venezuela, Brazil, and Liberia. The Japanese tax reform of 1949–50 is also examined. The thrust of these programs has been notably similar to that found in developed nations in the 1980's in that they have aimed to redistribute wealth by broadening income tax bases and flattening rates. Developing nations have also shifted toward more comprehensive, simpler, internal indirect taxes levied at rates much more uniform than were common even a decade ago. Additional papers cover general issues related to tax reform, including administrative factors, the impact of the 1986 U.S. tax reform, the

development and application of simple general equilibrium models, and political constraints upon and political opportunities for tax reform. The final paper cites the successes and failures of the tax reforms and draws lessons for future efforts.

023 **PN-ABC-914**
MF \$1.08/PC \$11.05

Central America's foreign trade and balance of payments : the outlook for 1988–2000

Zuvekas, Clarence, Jr.
 U.S. Agency for International Development. Bureau for Latin America and the Caribbean
 May 1989, 51p. + attachment : statistical tables, En
 Staff working papers / U.S. Agency for International Development, Bureau for Latin America and the Caribbean, no.1

Central America's slow recovery from the world recession of 1980–82 is analyzed in this report in order to provide insight into the region's economic future. The report attributes the prolonged economic difficulties of the region and its five countries—Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua—primarily to external forces: (1) sharp declines in the prices of Central America's principal traditional exports, particularly coffee; (2) protectionist pressures in the industrialized countries; (3) increased interest rates on external debt; (4) reduced lending to Central America by commercial banks and large international financial institutions; and (5) relatively slow-to-moderate growth in the industrial countries. The armed conflicts in El Salvador and Nicaragua have also had spillover effects throughout the region. Efforts to alleviate these problems through domestic structural economic reforms are discussed. The report then uses three scenarios for Central American economic growth to the year 2000 to illustrate the importance of export diversification, particularly expanded sales of nontraditional products to markets outside the region. The success of such a strategy, however, would depend not only on domestic policy reforms but also on the cooperation of the international economy.

024 **PN-ABD-073**
MF \$1.08/PC \$7.28

Agricultural markets and economic development in Africa : final report

Christensen, Garry N.; Eriksen, John H.
 Ithaca International Ltd.
 U.S. Agency for International Development. Bureau for Africa (Sponsor)
 Jun 1989, vii, 47p., En
 6980510

Efficient agricultural markets are generally acknowledged to be a necessary condition for economic growth in most African countries. This report uses the "perfect competition" market model to analyze the constraints imposed on agricultural markets in sub-Saharan Africa. These constraints include: the region's poor resource base and weather variability; price risk in residual markets; shortages of productivity-boosting technology; inadequate transport and communication infrastructure; low household purchasing power; direct government market intervention; poor macro and sectoral economic management; political instability; and changes in the trading position of Africa in world markets. These constraints, it is argued, cannot be overcome by reform at the market level alone. A more comprehensive, six-step reform process is suggested. (1) Undertake broad appraisals of government macroeconomic policy. (2) Assess the agricultural sector in detail and rank its problems. (3) Develop a working consensus among key political decisionmakers, policy analysts, market participants, and donor representatives on a ranking of problems to be addressed. (4) Conduct rapid market appraisals which consider both the political and economic consequences of market reform. (5) Select a priority market for reform. (6) Establish a collaborative reform agenda which specifies and schedules the actions to be implemented. Recommendations for A.I.D. participation in the reform process are included.

025

*PN-ABD-213

MF \$1.08/PC \$6.76

How to end up an utter failure as Minister of the Economy : lessons that emerge from 20 years of Argentine economic policy

de Pablo, Juan Carlos

Institute for Contemporary Studies. International Center for Economic Growth

U.S. Agency for International Development. Bureau for Program and Policy Coordination. Office of Policy Development and Program Review (Sponsor)

Sep 1988, 48p., En

Occasional papers / International Center for Economic Growth, no.12

9300092

**Also available from: International Center for Economic Growth, 243 Kearny St., San Francisco, CA 94108 USA*

During the past two decades, Argentina's Ministry of the Economy has had a revolving door, with 19 Ministers passing through between 1968 and 1987. During this time, prices rose 30 million times while per capita income remained unchanged. This monograph, written by the best-known economic journalist in Argentina, considers the principal failures of these Ministers. The first section systematizes their "sins" as they relate to the formulation of economic policy (e.g., believing that political and governmental power are unlimited), while the second covers those related to policy implementation and promotion (e.g., attempting to delegate these tasks entirely to others). The third section deals with errors of a "personal" nature, such as self-aggrandizement. In the concluding section, two ex-Ministers of the Economy are given the opportunity to respond. The report states that, in addition to appropriate technico-professional qualifications, a successful Minister of the Economy must: (1) have a sound understanding of policy dynamics as well as the limitations on the government's and the Ministry's political power and (2) become personally involved in tasks associated with implementation. Six appendices on key issues related to the operation of the Ministry of the Economy are included.



Between 1968 and 1987, prices for staples like food rose 30 million times in Argentina.

026**PN-ABC-044**
MF \$3.24/PC \$25.61**Private enterprise strategy options for the South Pacific region : final report**

SRI International

Arthur Young and Co.

U.S. Agency for International Development. Bureau for Asia and Near East. South Pacific Regional Development Office (Sponsor)

U.S. Agency for International Development. Bureau for Private Enterprise. Office of Project Development (Sponsor)

Mar 1988, v, 179p. + attachment, En
940202803

The geographic characteristics of the South Pacific nations pose unique challenges for private sector development. The countries are widely scattered throughout the South Pacific, have low population densities, and are too small to support diversified economic activities. Nonetheless, the region does possess the necessary resources and comparative advantages for sustained, long-term development. This report examines the specific opportunities and constraints faced by the private sector of each country in the region (the Cook Islands, Fiji, Kiribati, Papua New Guinea, the Solomon Islands, Tonga, Vanuatu, and Western Samoa). The report also explores alternative options for stimulating private enterprise and proposes an A.I.D. strategy framework. The regional program would seek three functional objectives: greater utilization of comparative advantages through private enterprise development, increased foreign exchange earnings, and higher levels of productive employment. These goals would be achieved through assistance in micro-enterprise management training, trade and investment, and policy dialogue. According to the report, private enterprise represents the only viable means of growth in this region. Without effective private sector development, living standards would stagnate or, more likely, decline.

027**PN-ABC-187**
MF \$3.24/PC \$26.00**Study of business climate in Mali**

Grant, William; Hanel, Petr

U.S. Agency for International Development. Bureau for Africa. Mali

U.S. Agency for International Development. Bureau for Science and Technology. Office of Rural and Institutional Development (Sponsor)

Sep 1988, xvi, 116p. + 11 annexes : statistical tables, En
9311096

Mali faces a serious employment problem brought about by steady population growth, declining public sector employment, and a stagnant private sector. This study analyzes the country's business climate with particular emphasis on potential areas of dynamic private sector growth. Background information on Mali's macroeconomic situation is followed by a description of the country's private sector, which is characterized by limited industrial activity and a high level of artisanal activity. Constraints to business development are identified which relate to geography and climate, infrastructure, human resources, and local and financial markets. The report then analyzes constraints to private sector development imposed by monetary, budgetary, and trade policies, as well as by the investment code and the regulatory environment. Prospects for the expansion of economic activity are examined in the following chapter, which develops models to analyze the structure of domestic consumption and the capacity for domestic production vis-a-vis import penetration into local markets. The report then analyzes demographic trends related to the current high unemployment rate and presents four possible scenarios of the future evolution of urban employment. The final two sections of the report draw conclusions on the business climate in Mali and present recommendations for a private sector strategy for USAID/Mali.

028

PN-ABC-337
MF \$1.08/PC \$2.47

Center for Privatization : bibliographic report

Center for Privatization
U.S. Agency for International Development. Bureau for
Private Enterprise (Sponsor)
Dec 1988, [18]p., En

Materials acquired during 1988 by the Center for Privatization and deemed to have particular significance to privatization in developing countries are cited in this bibliography. Some significant works dealing with privatization in industrialized countries, including the United Kingdom and the United States, are also included. The materials are not necessarily new. Individual entries, which are listed by principal author or collaborator, include the following information: title, a complete list of authors and sponsoring institutions, project numbers and other references, and a brief annotation. In all, 51 items are cited. (Author abstract, modified)

029

PN-ABC-339
MF \$1.08/PC \$4.29

Impact of classification on policy

Farbman, Michael; Lessik, Alan
U.S. Agency for International Development. Bureau for
Science and Technology
(Workshop on Small Scale Enterprise Development : in
Search of New Dutch Approaches, The Hague, NL,
6-7 Mar 1989)
1989, 31p., En

A system of classification is outlined for analyzing and determining the direct interventions and policy support needed to promote small enterprise development. The model identifies three categories of small enterprises—(1) the survival activities of the poorest, (2) microenterprises, and (3) small-scale enterprises. Each category suggests its own particular approach for direct intervention and policy support programs. Community development approaches for poverty alleviation are best suited for the survival group. Low levels of group-oriented credit and technical

assistance are the usual programs for the microenterprise group, while individually targeted business development support characterizes the majority of small-scale enterprise development programs. Policy support options, it is suggested, should be similarly targeted for each category. The survival sector needs economic policies that encourage broad-based economic growth and provide incentives to raise rural, non-farm incomes. Microenterprise development is spurred by policies that increase aggregated demand for products in rural markets, eliminate bias in trade policies, encourage proper valuation of currency and reduce or eliminate administrative and regulatory bottlenecks. Finally, policies beneficial to small-scale enterprises are those that reduce penalties on graduation to the formal sector and those that provide incentives for growth into medium-sized businesses. A final point which should be emphasized is that barriers to progressing from one category to the next larger category are significant. Preliminary empirical evidence indicates that there is little natural growth out of a category to its larger neighbor. (Author abstract, modified)

030

PN-ABC-735
MF \$2.16/PC \$13.39

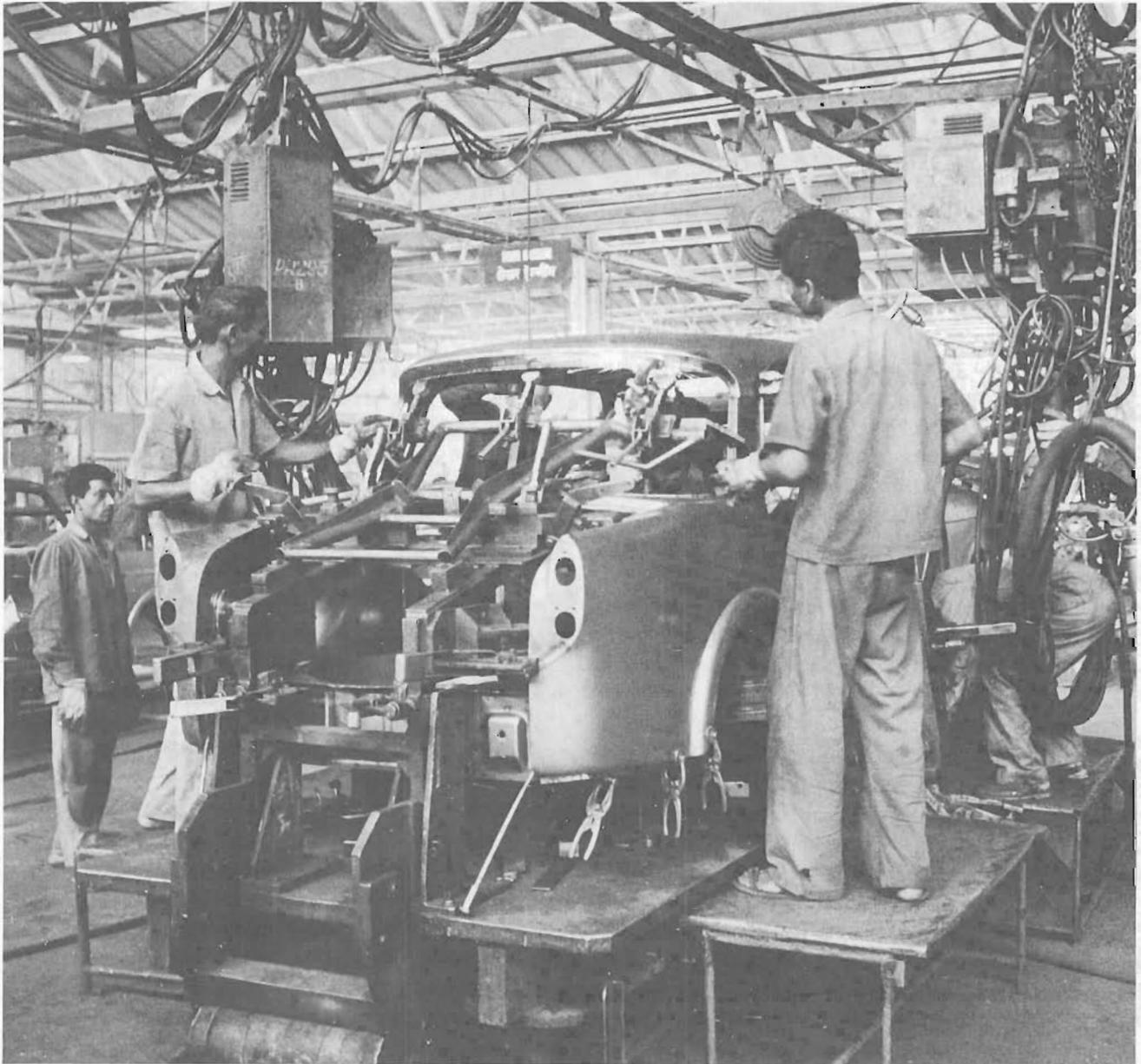
Critical issues in privatization : politics, institutions, and labor

Cowan, L. Gray
U.S. Agency for International Development. Bureau for
Program and Policy Coordination. Office of Policy
Development and Program Review
May 1989, 99p., En
9300089

Third World governments are increasingly aware of both the economic benefits of privatization and the complex problems and risks that accompany it. This study examines three potential problems raised by privatization programs. (1) Privatization is inherently political and therefore risky. While it is unlikely that political opposition can be entirely disarmed, experience in Jamaica and Costa Rica shows that it can be reduced to the point where it is no longer a serious threat to a major privatization program. (2) Successful privatization requires institutional change. Many existing structures—constitutional, regulatory, judicial, etc.—pose obstacles to privatization.

But privatization also offers opportunities to increase skill levels in the concerned institutions. Privatization offices created to oversee the procedures offer their employees a knowledge of negotiations with the private sector they would otherwise not have. (3) A critical element in a privatization strategy is the labor force, which sees in privatization a loss of jobs, perquisites, and prestige as well

as a threat to wage levels. If the government fails to calm these fears, the entire privatization program may be threatened. Conversely, persuading labor that the government takes its objections seriously and is endeavoring to meet them honestly and openly will go far toward public acceptance of privatization.



Workers begin assembly of a car in an auto plant in India. A hostile labor force can be a key constraint to successful privatization programs.

031

PN-ABB-745
MF \$2.16/PC \$18.72

Science and food : the CGIAR and its partners

Anderson, Jock R.; Herdt, Robert W.; Scobie, Grant M.
Consultative Group on International Agricultural
Research

U.S. Agency for International Development. Bureau for
Science and Technology. Office of Agriculture
(Sponsor)

1988, xi, 134p. : charts, statistical tables, En

Published by World Bank

Selected bibliography: p.124-127

Includes index

9364111

The Consultative Group for International Agricultural Research (CGIAR) was founded in 1971 to coordinate policy and funding for a growing number of international agricultural research centers. Currently, 13 centers in both industrialized and developing nations are sponsored by CGIAR. This report assesses the impact of CGIAR on Third World agriculture in terms of two broad categories: specialized research undertaken at CGIAR research centers, and the relationship between CGIAR and the emerging national agricultural research systems in developing countries. In particular, the document discusses CGIAR's work in: (1) plant breeding techniques; (2) farming methods; (3) plant germplasm preservation; (4) policy analysis; (5) researcher training; (6) the distributional and nutritional effects of new crop varieties; and, (7) the growth of national agricultural research systems and CGIAR's impact on them. A final section charts future CGIAR work in terms of improved use of financial resources by CGIAR and future collaboration with national research systems. One of the great comparative advantages of international research centers, the study concludes, is their relative insulation from short-term national pressures to respond to the interests of politically powerful elites, enabling them to continue sponsoring research initiatives that will assist development generally and help the poor especially.

032

***PN-ABC-304**
MF \$1.08/PC \$2.99

Solar radiation and rice productivity

Venkateswarlu, B.; Visperas, R.M.

International Rice Research Institute

U.S. Agency for International Development. Bureau for
Science and Technology. Office of Agriculture
(Sponsor)

Oct 1987, 22p. : charts, statistical tables, En
IRRI research paper series, no.129

936411102

**Also available from: International Rice Research
Institute, P.O. Box 933, Manila, Philippines*

Modern rice cultivars, although possessing high yield potentials, have not produced wet season yields equal to those in the dry season. This paper suggests that light intensity during the rice plant's reproductive phase may be crucial for higher productivity and nitrogen responsiveness. The paper reviews several studies on the influence of solar radiation on productivity, relevant plant factors including leaf area and plant type, growth phases, the effects of light stress on photosynthesis, light quality, and translocation. Information on yield components under low-light stress, including grain filling, highlights the relationship between structure and function. These studies, it is concluded, have revealed the possibility of developing cultivars that will do well under low-light conditions. Promising lines of investigation for developing suitable plant types are indicated. (Author abstract, modified)

033

***PN-ABC-305**
MF \$1.08/PC \$2.08

Model of resource constraints on turnaround time in Bangladesh

Orr, Alastair W.; Magor, Noel P.
International Rice Research Institute
U.S. Agency for International Development, Bureau for
Science and Technology, Office of Agriculture
(Sponsor)
Nov 1987, 15p. : statistical tables, En
IRRI research paper series, no.130
936411102
**Also available from: International Rice Research
Institute, P.O. Box 933, Manila, Philippines*

Recent research shows that shortages of labor and particularly of draft power during turnaround time—the time between harvesting aus rice and transplanting aman rice—have prevented the adoption of modern rice varieties in Bangladesh. This paper develops a linear programming model of resource use during the turnaround times for aus and transplanted aman, the country's two major rice crops, as a means of evaluating seven different strategies to reduce these constraints. Results of the model suggest that draft power is a constraint on the area under modern aus varieties, while labor shortages are also evident for aus and transplanted aman varieties. Individually, power tillers and minimum tillage are the most effective ways to reduce the draft power constraint and increase the area under modern aus varieties. But the model also demonstrated the need for new varieties: in particular, a direct-seeded modern aus, a short-duration modern aus, and an IR50-type modern aman. A combination of strategies involving new varieties and power tillers or minimum tillage would give the best results. Together, they increased the area under modern aus varieties in the model from 50% to nearly 100%, and the area under modern aman varieties from 12% to more than 80%. (Author abstract, modified)

034

***PN-ABC-317**
MF \$1.08/PC \$3.38

Summary and recommendations of the Asian region groundnut scientists' meeting, 14–17 Nov 1988, Malang, Indonesia

International Crops Research Institute for the Semi-Arid
Tropics
U.S. Agency for International Development, Bureau for
Science and Technology, Office of Agriculture
(Sponsor)
(Groundnut Scientists' Meeting, Malang, ID,
14–17 Nov 1988)
1989, 20p., En
936411106
**Also available from: International Crops Research
Institute for the Semi-Arid Tropics, Patancheru,
Andhra Pradesh 502 324, India*

Fifty-two scientists from national, regional, and international research institutions concerned with groundnut production in the Asia region convened in Indonesia in November, 1988, to discuss problems of groundnut production in the region and ways to overcome them through collaborative projects. International research organizations' inputs were reviewed, and topics covered included diseases, pests, photoperiod and temperature, drought, nutrient stresses, postharvest technology and aflatoxin, germplasm collection and adaptation, crop production, international cooperation and training, and groundnut research in Indonesia. Summaries of these discussions, along with related recommendations, are presented in this report. Workshop participants also established priorities for future research and recommended continuing research collaboration and increasing training for scientists within the region. (Author abstract, modified)

AGRICULTURE

035

*PN-ABC-318
MF \$3.24/PC \$29.51

Bacterial diseases of the potato : report of the planning conference on bacterial diseases of the potato, 1987

International Potato Center

U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture (Sponsor)

(Planning Conference on Bacterial Diseases of the Potato, Lima, PE, 1987)

1988, iv, 233p. : statistical tables, En
936411107

**Also available from: International Potato Center, Apartado 5969, Lima, Peru*

Bacterial potato diseases are responsible for significant crop loss and economic hardship in many regions of the world. This collection of papers delivered at a recent international conference examines the current state of research and management of bacterial diseases of the potato. Seven papers discuss *Pseudomonas solanacearum*, a major source of bacterial wilt in potatoes, in terms of infection, identification, characteristics, control, and resistance. Six papers examine the characteristics, control, and pest interaction of *Erwinia* diseases. Other subjects include, inter alia: (1) genetic engineering and potato breeding for bacterial disease resistance (3 papers); (2) strategies for bacterial wilt control (1 paper); and (3) cultural practices for managing bacterial wilt (1 paper). A review of the June 1979 Planning Conference recommendations and a list of recommendations concerning bacterial wilt and *Erwinia* diseases are included.

036

PN-ABC-341
MF \$7.56/PC \$83.33

Contract farming in Africa

Watts, Michael; Little, Peter D.; et al.

Clark University. International Development Program Institute for Development Anthropology, Inc.

U.S. Agency for International Development. Bureau for Science and Technology. Office of Rural and Institutional Development (Sponsor)

1988, 2v. : charts, statistical tables, En

Contents: v.1., Comparative analysis; v.2., Case studies
9311135

Contract farming (CF), a scheme in which smallholders contract with transnational agribusiness firms to grow specific crops, has gained widespread support and recognition in recent years. Based on case studies in seven sub-Saharan countries (The Gambia, Nigeria, Ghana, Ivory Coast, Senegal, Kenya, Malawi), this document assesses the nature and extent of CF in Africa and the influence of development assistance in its promotion, and makes recommendations addressing CF's strengths and weaknesses. Volume One contains detailed discussions of: CF's legal, historical, and global dimensions; its growth and sustainability; the effects of CF on land, labor, and farmer income; the economic and regional multipliers associated with CF; the role of agribusiness management, private firms, and government institutions in CF; and CF and technology transfer and extension. The final section of Volume One develops a strategy for promoting CF in ways which serve development rather than, as is frequently the case, merely commercial goals. Major needs are to: improve CF's regional and local impacts; use CF to develop relatively poor and remote regions; develop local support for CF (currently almost entirely lacking); find the right mix of public and private sector elements; support small- and medium-scale rather than large CF schemes; and integrate CF into Africa's ongoing economic and agricultural policy debates. Volume Two contains detailed results of the most important of the case studies: private horticultural schemes in Kenya and Senegal; joint government/private oil-palm projects in Ghana and the Ivory Coast; private poultry schemes in Senegal; and a state-managed rice scheme in The Gambia.

037

PN-ABC-385
MF \$1.08/PC \$2.21

Erosion, productivity, and sustainable agriculture : report of a workshop held at Texas Tech University, July 25 and 26, 1988

Texas Tech University. International Center for Arid and Semi-arid Land Studies

U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture (Sponsor)

(Workshop on Erosion, Productivity, and Sustainable Agriculture, Lubbock, TX, US, 25–26 Jul 1988)

Jan 1989, [12]p., En
9364021

Soil erosion and soil fertility decline threaten the sustainability of African agriculture. Reliable data on these problems are lacking, however; data on wind erosion are conspicuously absent, and maps showing the effects of erosion virtually non-existent. This workshop report suggests a simple and rapid method that can be used in the absence of empirical data to assess erosion and its impact upon productivity. The method, called "structured informed opinion analysis," involves transferring onto maps the qualitative information and mental images acquired over the years by farmers, pastoralists, extension agents, scientists, and conservationists on erosion and the erosion-productivity equation in specified areas. The maps are to serve as the basis for calculating—particularly at the national and regional levels—the extent of damaged land, for locating the places where conservation efforts are needed, and for estimating the costs and benefits of these efforts. The report also proposes three other strategies to better understand and control erosion: (1) long- and short-term research, including evaluating the impact of technological packages to increase production, assessing the costs of erosion, identifying soil properties in the erosion-productivity equation, and monitoring erosion and productivity loss by agroecological zone; (2) development of appropriate soil conservation and yield-increasing practices and devising simple methods to measure erosion losses; and (3) study of the erosion control practices of subsistence and commercial farmers.

038

PN-ABC-438
MF \$1.08/PC \$8.32

Role of agriculture in employment generation and income distribution in Asia and the Near East

Timmer, C. Peter

Harvard University. Harvard Institute for International Development

U.S. Agency for International Development. Bureau for Asia and Near East. Office of Technical Resources (Sponsor)

(ANE/TR/ARD Strategy Symposium on Agriculture in the 1990's, Rosslyn, VA, US, 7–9 Sep 1988)

Aug 1988, 57p. : charts, En

What agricultural development strategies will raise real wages in rural areas? To answer this question as it applies to Asia and the Near East, this paper uses data from 12 countries (four each from South Asia, Southeast Asia, and the Near East) to examine: (1) empirical trends in agricultural labor and income distribution; (2) key elements influencing labor demand in the rural economy; and (3) policy instruments for influencing income distribution. A final section discusses trade-offs and opportunities in promoting agricultural labor growth in the likely economic environment of the 1990's. Two basic principles are noted. First, rising labor productivity in agriculture is necessary, but not sufficient, to increase rural wages over time. Second, only higher incomes can guarantee sustained improvements in the diets of the poor. Improvements in labor productivity, wages, and income distribution, however, require specific government policies; "trickle down" growth is insufficient. The main instruments of such policies are investments in rural infrastructure (including irrigation with its second-round impact on multiple cropping); new technologies that raise yields, increase labor requirements, shorten the growing season, and permit a second or third crop; adequate price incentives to stimulate on-farm savings and investments, and roundabout expenditure multipliers; and a favorable environment for vertical diversification, which steadily transfers workers from agriculture to industry and the service sector, even if it leaves them living on the farm.

039

PN-ABC-489
MF \$1.08/PC \$4.42

Niger bookshelf : a selected bibliography on agriculture in the West African semi-arid tropics

Jomini, Patrick A.; Dunn, Kim
Purdue University. Dept. of Agricultural Economics
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Agriculture
(Sponsor)
5 Apr 1989, ii, 31p., En
Staff paper / Purdue University. Dept. of Agricultural
Economics, no.89-5
9364021

Prepared primarily for use by A.I.D. contractors, this bibliography lists a wide-ranging array of English- and French-language documents relevant to the study of agriculture in the semiarid conditions characteristic of Niger and, more generally, of the Sahel. Entries are listed alphabetically, by author, and include a code placing that entry in one of the following categories: (1) geography and climatology; (2) country and sector studies; (3) annual reports of research organizations; (4) farming systems; (5) dryland agronomy; (6) dryland crop production economics; (7) irrigated agronomy; (8) irrigated crop production economics [categories 5-8 are each subdivided into (a) new varieties and (b) improved agronomy]; (9) livestock and animal traction; (10) resource economics; (11) marketing, subdivided into (a) inputs, (b) outputs, (c) international and regional trade, and (d) cooperatives; (12) finance and credit; (13) methodology; (14) extension; (15) Mission reports and project documents; (16) food policy; and (17) drafts, proposals, and works in progress.

040

PN-ABC-558
MF \$3.24/PC \$38.22

Improving performance of irrigation bureaucracies : suggestions for systematic analysis and agency reorientation

Uphoff, Norman; Ramamurthy, Priti; Steiner, Roy
Cornell University. Irrigation Studies Group (Sponsor)
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Agriculture
(Sponsor)
Mar 1988, vi, 290p., En
9364127

To date, research on the social and institutional aspects of irrigation management has focused on farmer groups to the relative neglect of the management role of government bureaucracies. This report explores ways of enhancing the effectiveness of these government agencies. Part One discusses factors affecting the performance of an irrigation bureaucracy, such as: irrigation management structures; irrigation objectives (with an emphasis on the compatibility of government and water user objectives); the contexts in which the bureaucracies operate (agroecological, technical, historical, economic, sociocultural, political), and the structure, orientation, capacities, and linkages of irrigation agencies. Part Two presents strategies for improving bureaucratic performance through: (1) better management structure and style; (2) the reorganization of irrigation agencies; (3) socio-technical analysis; and (4) institution building. Part Three provides a number of related observations on: (1) bureaucratic culture in irrigation management; (2) problem-solving methodologies; (3) organization theory on irrigation bureaucracies in Africa; and (4) the impact of enforced austerity on Latin American irrigation bureaucracies. The study concludes with several observations. Bureaucratic performance should be assessed with regard to concrete objectives and environmental conditions—not abstract organizational standards. The advantages and drawbacks of both the responsive management and routinized predictability approaches should be considered. Finally, strong leadership and the recognition of structural aspects (e.g., patterns of authority, mechanisms for accountability, etc.) are essential for effective organizational functioning and reform.

041

***PN-ABC-562**
MF \$2.16/PC \$15.21

Intrahousehold decisionmaking and resource control : the effects of rice commercialization in West Africa

Webb, Patrick

International Food Policy Research Institute
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Agriculture
(Sponsor)

Feb 1989, viii, 107p. : charts, maps, statistical tables, En
Working papers on commercialization of agriculture and
nutrition, no.3

936411114

**Also available from: International Food Policy
Research Institute, 1776 Massachusetts Ave. NW,
Washington, DC 20036 USA*

In 1983, The Gambia initiated a project to introduce irrigation technology to about 3,500 rice producers. This study evaluates the impact of this new technology on intrahousehold decisionmaking, resource control, and labor patterns. Several major changes resulted from the project. Whereas rice had been grown mainly by women as both a private cash crop and as a communal food crop,

Contrary to planners' expectations, higher rice yields resulting from irrigation have been retained in order to increase household food security rather than sold as a cash crop.

the new technology resulted in an almost total shift to communal production. Control of the crop was passed on to men, who are traditionally responsible for communal food production, and male labor in the rice fields increased significantly. Contrary to planners' expectations, higher rice yields resulting from irrigation have been retained in order to increase household food security rather than sold as a cash crop. However, many women have replaced their former rice cash crop activities with individual production of upland cash crops such as groundnuts and cotton. The report illustrates not only the varied tasks of different

household members, but the great potential of agricultural projects to respond to this variety. This conclusion underscores the importance of the complex household production-consumption system in analyzing the distributional effects of commercialization and technological change in West Africa.

042

PN-ABC-678
MF \$2.16/PC \$15.08

Triticale : a promising addition to the world's cereal grains

Brown, William L.; Bressani, Ricardo; et al.

National Academy of Sciences. National Research
Council. Office of International Affairs. Board on
Science and Technology for International Develop-
ment

U.S. Agency for International Development. Office of
the Science Advisor (Sponsor)

U.S. Agency for International Development. Bureau for
Science and Technology. Office of Agriculture
(Sponsor)

(Meeting of Ad Hoc Panel of the Advisory Committee
on Technology Innovation, Board on Science and
Technology for International Developmen[t], National
Research Council, Mexico City, MX, Apr 1986)

1989, ix, 105p. : ill., charts, statistical tables, En

Published by National Academy Press

9365538

Triticale, a hybrid cereal resulting from the crossing of wheat and rye, is regaining interest in the scientific community as a high-yielding food crop for marginal agricultural lands where wheat will not thrive. This report summarizes recent advances in triticale research around the world, with particular emphasis on the trials conducted at the International Maize and Wheat Improvement Center (CIMMYT). The report discusses the history of triticale from its development little more than 100 years ago to the present, the limitations and uncertainties associated with the cereal, problems in triticale breeding, its use as food and as feed, experiences with triticale from around the world (including Eastern Europe, the Soviet Union, Spain, Brazil, China, and Australia), and research needs. CIMMYT's experiences with triticale show that it

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has great potential as an alternative to wheat, but much more work is needed to realize that potential. A number of specific research needs are identified, including (1) expanded field trials of triticale in developing nations, (2) wider genetic experimentation in triticale (for example, fewer than 1% of the 200,000 varieties of wheat have been used to make primary triticale), and (3) breeding of disease-resistant and earlier maturing varieties. A discussion of the potential of triticale production in the United States is included among the appendices.

043 **PN-ABC-819**
MF \$5.40/PC \$61.75

Strengthening collaboration in biotechnology : international agricultural research and the private sector—proceedings of a conference held April 17–21, 1988 in Rosslyn, VA

U.S. Agency for International Development. Bureau for Science and Technology. Office of Program
U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture
(Conference on Strengthening Collaboration in Biotechnology : International Agricultural Research and the Private Sector, Rosslyn, VA, US, 17–21 Apr 1988)
Apr 1989, xii, 480p. : ill., charts, statistical tables, En
9361406

A recent international conference hosted by A.I.D. focused on state-of-the-art biotechnology applications in five areas related to crop and animal improvement—vaccine development, plant cell and tissue culture, molecular technologies, biosafety concerns, genetic resources and wide crosses, and immunodiagnostic techniques. The conference also addressed itself to two institutional themes recognized by A.I.D. as essential to fruitful biotechnology research and development: (1) enhancing collaborative biotechnology research by international agricultural research centers; and (2) transferring biotechnologies from government-funded basic research to private sector development of commercially viable applications. These proceedings contain the 34 formal conference presentations. Among the specific topics covered are, inter alia: tissue culture for germplasm management and in rice breeding;

the impact of somaclonal variation; commercialization of vaccines; genetically engineered insect resistance; the application of restriction fragment length polymorphism to plant breeding; use of hormones and ovule and embryo culture to enhance wide crosses in arachis; cytogenetic manipulation of alien germplasm for wheat improvement; and diagnostic applications of immuno and DNA hybridization.

044 ***PN-ABC-912**
MF \$1.08/PC \$7.15

Experiences in success : case studies in growing enough food through regenerative agriculture

Tull, Kenneth; Sands, Michael; Altieri, Miguel A.
Rodale Institute. Rodale International
U.S. Agency for International Development. Bureau for Program and Policy Coordination. Office of Policy Development and Program Review (Sponsor)
1987, 52p. : ill., En
9300091
**Also available from: Rodale International, Rodale Institute, 222 Main St., Emmaus, PA 18098 USA*

Regenerative agriculture is the practice of improving a farm's resource base and productivity through increased use of abundant and renewable internal resources and reduced use of external inputs. According to this report, the development of the regenerative approach places agriculture in the context of today's environmental and economic realities. Five programs that have demonstrated successful regenerative agriculture and are conducive to wide application are profiled in the report: agroforestry in Bahunepati, Nepal; hillside soil conservation on farms in Ecuador; bio-intensive gardening in the Philippines; integrated soil regeneration in Rwanda; and the promotion of food self-sufficiency on small organic farms in Chile. The following criteria for success emerge from the case studies: (1) use of adaptable technologies that build on traditional practices; (2) farmer participation in program design, implementation, management, and evaluation; (3) program coordination with existing governmental activities; (4) a sufficiently long-term time horizon; (5) use of visuals and demonstrations in the extension process; (6)

recruiting of staff members from the local area; (7) use of technologies that can be taught by one farmer to another; and (8) use of follow-up visits.

045

***PN-ABC-915**
MF \$2.16/PC \$13.65

Storage, trade, and price policy under production instability : maize in Kenya

Pinckney, Thomas C.

International Food Policy Research Institute

U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture (Sponsor)

U.S. Agency for International Development. Bureau for Africa. Kenya (Sponsor)

Dec 1988, 102p. : charts, statistical tables, En
Research report / International Food Policy Research Institute, no.71

936411114

**Also available from: International Food Policy Research Institute, 1776 Massachusetts Ave. NW, Washington, DC 20036 USA*

Instability in the production and price of staple food causes economic hardship in many countries. In Kenya, the staple of maize has been subject to government regulation since the early colonial period in an effort to ensure proper supply and affordability. This paper uses a simulation approach to measure the cost of Kenya's current maize price band policy—in which maximum and minimum prices are set by the government—against the cost of an "optimal policy"—in which domestic prices are sensitive to world prices, domestic production, and government stocks. Price band policies, which have been almost constantly in use since Independence, have required the National Cereals and Produce Board (NCPB) to market most of the country's supply and to purchase all excess stocks of maize at prices set before planting. According to the report, the NCPB has failed to effectively carry out such a policy. In years of surplus, absorbing maize overstock has delayed payouts to farmers and strained the NCPB's limited financial resources. In years of shortage, importation restrictions, corruption, and bureaucratic inefficiency have resulted in inadequate supply. Implementation complexi-

ties, however, make a full shift to a market-sensitive optimal pricing policy undesirable. Instead, a gradual introduction of optimal policy aspects is recommended to enhance fiscal efficiency without jeopardizing price band simplicity. In support of such a change, the paper concluded that: (1) adding price flexibility would generate revenues to better enable the NCPB to defend official prices and (2) the degree of price flexibility required to achieve significant cost savings in the price band policy would not be large.

046

***PN-ABC-990**
MF \$1.08/PC \$6.76

Trends and prospects for cassava in Zaire

Tshibaka, Tshikala; Lumpungu, Kamanda

International Food Policy Research Institute

U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture (Sponsor)

Feb 1989, viii, 45p. : charts, statistical tables, En
Working paper on cassava / International Food Policy Research Institute, no.4

936411114

**Also available from: International Food Policy Research Institute, 1776 Massachusetts Ave. NW, Washington, DC 20036 USA*

Cassava plays a strategic role in food security, especially in sub-Saharan Africa, because of its high yields and adaptability to poor soils and climatic conditions. This report discusses the importance of cassava in the Zairian Basin, with an emphasis on crop supply, demand, and utilization. Introduced into Zaire in the late 16th century, cassava is the country's principal foodstuff and a major source of employment and income for small farmers, particularly women, in most parts of the country. Cassava is grown on over 60% of the land devoted to Zaire's three major carbohydrate-based food crops (cassava, rice, and maize), and between 1971 and 1984, it accounted for 85% of the total cereal equivalent output. Cassava roots are mainly ground into flour or made into *chickwangu* (varieties of bread), while the leaves are used extensively as vegetables. From an area of 1.6 million ha in the early

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1970's, the area under cassava cultivation grew to some 2.3 million ha in 1984. Though yields have declined since 1976 due to the outbreak of bacterial blight, production should continue at an annual growth rate of 2.8% through the year 2000 due to an expansion of the area under cultivation. Further expansion of cassava production will require efforts to integrate the Zairian Basin into domestic food markets, promote industries using cassava as a raw material, and enhance long-term cassava processing for human and animal consumption, industrial use, and export.

047 **PN-ABC-991**
MF \$8.64/PC \$96.07

Mungbean : proceedings of the second international symposium, Bangkok, Thailand 16–20 November 1987

Asian Vegetable Research and Development Center
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Agriculture
(Sponsor)
(International Symposium on Mungbean, 2nd,
Bangkok, TH, 16–20 Nov 1987)
Dec 1988, xii, 730p. : charts, statistical tables, En
AVRDC publication no.88–304
936411105

A short-duration legume with easily digestible protein, the mungbean has enjoyed a production growth rate in Asia over the past decade that has been unequalled by any other pulse crop. These proceedings of the second international mungbean symposium, held in Thailand, a key mungbean producer, user, and exporter, contain the texts of 83 papers organized into seven sections. Section I documents the origin, evolution, and taxonomy of the mungbean, as well as mungbean genetic resources. Section II deals with plant breeding programs, progress in breeding mungbeans, breeding methodologies, and wide hybridization. Sections III, IV, and V respectively present papers on physiological aspects of mungbeans, plant protection, and crop management. Detailed information on the economics, marketing, and utilization of mungbeans is provided in Section VI; various mungbean recipes from around the world are included. Finally, Section VII presents 19 regional/coun-

try status reports on mungbean problems, research progress, marketing, and future research thrusts. Includes summaries of workshop discussions on the major topics, strategies and recommendations for future research, and author and subject indexes.

048 ***PN-ABD-110**
MF \$5.40/PC \$57.07

Lost crops of the Incas : little known plants of the Andes with promise for worldwide cultivation

Popenoe, Hugh; King, Steven R.; et al.
National Academy of Sciences. National Research
Council. Office of International Affairs. Board on
Science and Technology for International Develop-
ment
U.S. Agency for International Development. Office of
the Science Advisor (Sponsor)
1989, xi, 415p. : ill., En
Published by National Academy Press
9365538
**Also available from: National Academy Press, 2101
Constitution Ave. NW, Washington, DC 20418 USA*

The Incan Empire's status as a major center of crop diversity was destroyed by Spanish conquerors who demanded the replacement of indigenous crops with European species. Forced into obscurity were at least a dozen native root crops, three grains, three legumes, and more than a dozen fruits. However, while hidden from the outside world, these crops have continued to be cultivated

*Contrary to cultural prejudices,
research indicates that many of the
crops can provide acceptable yields,
good nutrition, and interesting
tastes.*

in the high Andes, mostly by direct descendants of the Incas. Recently, after nearly 500 years of neglect, these crops have begun to receive recognition as potentially significant contributors to the world's food supply. Contrary to cultural prejudices, research indicates that many of

the crops can provide acceptable yields, good nutrition, and interesting tastes. This book provides both general and more specialized information on specific Andean crops—including roots and tubers, grains, legumes, vegetables, fruits, and nuts—deserving investigation. The historical role and uses of each crop are highlighted, as is the promise the crops hold for markets in industrialized countries. According to the report, most of the crops require basic research in such areas as germplasm collection, selection, agronomy, genetics, handling, nutrition, and pest and disease control to improve their potential for adaptability and profitability. With proper development, these crops could take on a significant role in future food production—both in their native Andean highlands as well as in similar climates worldwide. Appendices provide the addresses of experts on the individual crops, information on potential sources of germplasm, and a select bibliography.

049 **PN-ABC-536**
MF \$5.40/PC \$59.28

Pesticide management and integrated pest management in Southeast Asia : proceedings of the Southeast Asia pesticide management and integrated pest management workshop, February 23–27, 1987, Pattaya, Thailand

Teng, P.S.; Heong, K.L.
 Consortium for International Crop Protection
 U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture (Sponsor)
 (Southeast Asia Pesticide Management and Integrated Pest Management Workshop, Pattaya, TH, 23–27 Feb 1987)
 1988, x, 473p. : ill., chart, statistical tables, En 9364142

Achieving higher crop productivity without danger of environmental pollution and health risks from pesticides is a challenge facing many Southeast Asian nations. As the frequency of poisonings and misapplications rises with greater pesticide use, the role of integrated pest management (IPM) becomes more crucial if pesticide safety and effectiveness are to be maintained. This collection of 61

formal papers delivered at a recent international conference examines the current state of IPM practices and research in the Southeast Asia region. Subjects covered by the papers include: (1) IPM infrastructure (four papers); (2) IPM research (ten papers); (3) IPM development (ten papers); (4) IPM implementation (five papers); (5) pesticide resistance (six papers); (6) pesticide poisoning data collection (six papers); (7) environmental concerns (seven papers); (8) legislation, applicator exposure, and pesticide disposal (seven papers); and (9) pesticide safe use training programs (six papers). An executive summary of the conference, including the recommendations made by its 12 mini-workshops, have been published separately under the auspices of the U.N. Environmental Program in Bangkok, Thailand.

050 **PN-ABC-595**
MF \$2.16/PC \$19.89

Cell and tissue culture in field crop improvement : proceedings of the seminar 'cell and tissue culture in field crop improvement'

Bay-Petersen, Jan, ed.
 Food and Fertilizer Technology Center for the Asian and Pacific Region
 U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture (Sponsor)
 (Seminar on Cell and Tissue Culture in Field Crop Improvement, Tsukuba, JP, 4–9 Oct 1987)
 Dec 1988, 149p. : ill., charts, statistical tables, En FFTC book series, no.38
 9364111

The use of cell and tissue culture to identify and select useful variants at a cellular level has become one of the most powerful tools in modern plant breeding. Some major food crop lines and varieties bred using these techniques have already been released to farmers. This book, the proceedings of an international seminar on these issues, presents 13 research papers on recent advances in tissue culture, tissue culture of rice and other gramineae, and tissue culture of woody plants. Specific topics include, inter alia, production of disease-resistant plants using

somaclonal variations, protoplast techniques, the tissue root program at the International Rice Research Institute, and cotyledon tissue culture and shoot buds on roots in *Citrus*. Each paper is accompanied by an abstract.

051 ***PN-ABC-611**
MF \$7.56/PC \$83.07

Annual report for 1987, International Rice Research Institute

International Rice Research Institute
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Agriculture
(Sponsor)

[1988], xviii, 640p. : ill., charts, statistical tables, En
936411102

**Also available from: International Rice Research
Institute, P.O. Box 933, Manila, Philippines*

After 25 years in existence, the International Rice Research Institute (IRRI) remains vitally concerned with increasing rice yields in order to feed the poor, especially the urban poor. This 1987 annual report of the Institute covers four fundamental types of rice culture: upland; rainfed lowland; irrigated; and deepwater. The report documents the results of IRRI research with respect to: (1) genetic evaluation and utilization (including, inter alia, work in disease and insect resistance, drought tolerance, deepwater and flood tolerance, and seed science technology); (2) management of rice pests; (3) water management; (4) soil and crop management (including management of soil and fertilizer nitrogen, nitrogen fixation and azolla, tillage, organic manures, etc.); (5) the climatic environment; and (6) cropping systems (including physical and socioeconomic analyses, varietal testing, preproduction testing of improved cropping patterns, etc.). Also provided are the results of IRRI's work to develop new machinery for rice cultivation and summaries of IRRI's training program and of its ever-increasing efforts to collaborate with other international and national institutions.

052 ***PN-ABC-679**
MF \$3.24/PC \$37.31

Increasing small ruminant productivity in semi-arid areas : proceedings of a workshop held at the International Center for Agricultural Research in the Dry Areas, Aleppo, Syria, 30 November to 3 December 1987

Thomson, E.F., ed.; Thomson, F.S., ed.
International Center for Agricultural Research in the
Dry Areas

U.S. Agency for International Development. Bureau for
Science and Technology. Office of Agriculture
(Sponsor)

(Workshop on Increasing Small Ruminant Productivity in
Semi-arid Areas, Aleppo, SY, 30 Nov-3 Dec 1987)
1988, ix, 296p. : charts, statistical tables, En
Published by Kluwer Academic Publishers
936411112

**Also available from: International Center for
Agricultural Research in the Dry Areas, P.O. Box 5466,
Aleppo, Syria*

Livestock production represents about 30% of the agricultural revenue of West Asian and North African countries. Some 300 million small ruminants account for a large proportion of this output and provide a significant capital reserve for small farmers in the semiarid areas of these countries. This document presents the proceedings of a workshop held in Aleppo, Syria, which examined ways to enhance small ruminant productivity through improved livestock, nutrition, breeding, and health systems in semiarid areas. A total of 24 papers cover, inter alia: (1) the contribution of livestock to human dietary needs; (2) improved livestock production from straw-based diets; (3) small ruminant breeding strategies; (4) goat and sheep potential for milk and and meat production; (5) emerging bacterial diseases affecting small ruminant production; (6) the potential use of vaccines or genetically resistant animals in the control of helminthiasis; and (7) case studies of small ruminant activities in Cyprus, Egypt, Syria, Jordan, Libya, and Morocco. Workshop recommendations in the areas of small ruminant nutrition, genetics, and health conclude the report.

053

PN-AAZ-180
MF \$2.16/PC \$22.88

Fisheries technologies for developing countries

National Academy of Sciences. National Research Council. Office of International Affairs. Board on Science and Technology for International Development
U.S. Agency for International Development. Bureau for Science and Technology (Sponsor)
(Meeting on Fisheries Technologies for Developing Countries, Miami, FL, US, 13–15 Aug 1985)
1988, vii, 168p. : ill., charts, En
Published by National Academy Press
9365538

Of the 200 million people dependent on small-scale fisheries in the developing world, many are locked into economic systems that result in relative poverty. According to this report, the economic status of Third World fisheries could be improved through technology exchange both among developing regions and with industrialized countries. To this end, the report describes several innovative, relatively inexpensive technologies which may be adapted to suit indigenous needs and resources. Specifically, the technologies relate to: (1) boat design, construction, and propulsion; (2) fishing methods and gear; (3) artificial reefs and fish aggregating devices; (4) coastal mariculture; and (5) fish processing and preservation. Acknowledging that constraints to small-scale fisheries are rarely due simply to the absence of a specific technology, the report cites pertinent biological, economic, and social factors for consideration by those involved in introducing fishing technologies. Major problems are identified as: lack of government support; competition with large, modern commercial fisheries; overexploitation of marine resources; water pollution and mangrove destruction; limited access to markets due to lack of credit, capital, and transportation; inadequate equipment; and scarcity of wood for boat construction.

054

PN-ABC-545
MF \$1.08/PC \$2.73

Constraints in postharvest fishery research projects

Morrissey, Michael T.; Pollnac, Richard
University of Rhode Island. International Center for Marine Resource Development
International Service for National Agricultural Research (Sponsor)
U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture (Sponsor)
(Rutgers–ISNAR Workshop on Agricultural Technology Management, New Brunswick, NJ, US, 6–8 Jul 1988)
1988, 18p., En
931411113

Projects to commercialize seafood products have a long history of failure, according to this report. Two Latin American case studies are used to illustrate the problems faced by these projects. The first is a large-scale scheme to increase seafood consumption by establishing retail and

The project appeared to overcome many obstacles, namely, cultural prejudices against eating shark and difficult postharvest handling processes. However, after the project team departed, local fishermen were too afraid of sharks and inexperienced in harvesting them to continue the project.

and wholesale processing/distribution centers and expanding marketing networks. This project was plagued by problems in nearly all areas, including site selection for retail and wholesale centers, product quality, market research, and coordination between project participants. Due to poor sales, the centers were closed within two years. The second case study is a smaller-scale project to promote shark fishing and consumption. The project appeared to

AGRICULTURE

overcome many obstacles, namely, cultural values against eating shark and difficult postharvest handling processes. However, after the project team departed, local fishermen were too afraid of sharks and inexperienced in harvesting them to continue the project. According to the report, these and most other fishery projects in Latin America have suffered from a lack of relevant experience in the region, where seafood consumption is low. As a result, project planners resort to inappropriate models used in developed countries involving coldwater fish species. The final section of the report presents a methodology for identifying constraints to seafood commercialization projects which treats each element along the chain that extends from the resource to the consumer.

055

*PN-ABC-681

MF \$2.16/PC \$14.95

Tilapia genetic resources for aquaculture : proceedings of the workshop on tilapia genetic resources for aquaculture, 23-24 March 1987, Bangkok, Thailand

Pullin, R.S.V., ed.

International Center for Living Aquatic Resources Management

U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture (Sponsor)

(Workshop on Tilapia Genetic Resources for Aquaculture, Bangkok, TH, 23-24 Mar 1987)

1988, v, 108p. : ill., maps, statistical tables, En ICLARM contribution no.457

ICLARM conference proceedings, no.16

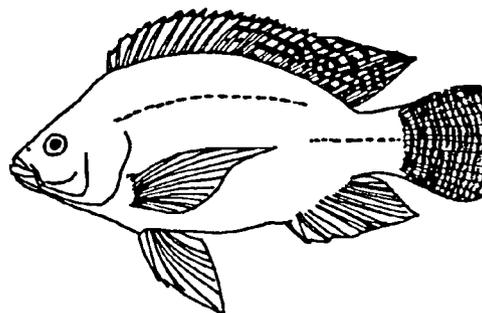
9311050

*Also available from: International Center for Living Aquatic Resources Management, MC P.O. Box 1501, Makati, Metro Manila, Philippines

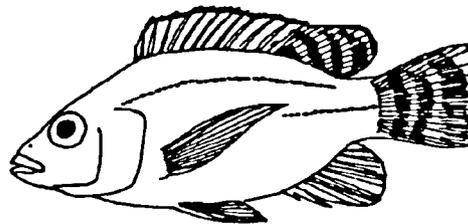
Tilapia are African fish that are used in warmwater aquaculture throughout the world. Some species, such as the Nile tilapia (*Oreochromis niloticus*), are highly versatile, herbivorous-microphagous feeders well suited to low technology farming systems. However, tilapia culture outside of Africa is based on a narrow genetic base taken from a

few founder populations, while Africa itself, which possesses a wealth of tilapia genetic resources, is hard pressed in developing these resources for aquaculture and in conserving wild tilapia populations, many of which are threatened by irreversible change or loss. A variety of issues cognate to this situation were discussed at an international symposium held in March, 1987. These proceedings contain formal presentations on: (1) tilapia resources in Africa in general (two papers); (2) wild and cultured tilapia genetic resources in Africa (Cameroon, Ivory Coast, Ghana, Madagascar, Malawi, Zimbabwe) and elsewhere (Philippines, Thailand, Singapore and Malaysia, Israel, the United States); (3) methods used in tilapia identification and genetic research (six papers); and (4) gene banks and culture collections (two papers). A final section documents a general discussion by symposium participants and their recommendations. Appendices discuss problems and prospects of tilapia genetic improvement, acquiring and maintaining reference populations of tilapia, and identifying tilapia populations used in aquaculture.

O. niloticus



O. aureus



The Nile tilapia (top) is well suited to low technology farming systems.

056

***PN-ABC-319**
MF \$1.08/PC \$4.29

World food needs and availabilities, 1988/89 : spring

U.S. Dept. of Agriculture. Economic Research Service.
International Economics Division

U.S. Agency for International Development (Sponsor)
Apr 1989, 30p. : charts, statistical tables, En

**Also available from: United States Department of
Agriculture, Economic Research Service,
1301 New York Ave. NW, Washington, DC
20005-4788 USA*

The need for food aid has fluctuated dramatically in recent years due to changes in cereal prices, local harvests, and consumer demand. This report reviews, on a regional basis, the need for cereal food aid in 55 food aid recipient countries for 1988/89 and 1989/90 and updates estimates for four individual countries—Egypt, Tunisia, India, and Sri Lanka.

Though cereal production in the 55-country group is up 13% over 1987–88, overall cereal needs continue to be high due to sharp increases brought on in several countries by higher commodity prices and stock rebuilding. Status quo (SQ) additional cereal needs for 1988/89 are estimated at 14.4 million tons, down 11.7 million from 1987/88. This figure is expected to drop by 2.1 million for the 1989/90 period, though requirements will depend heavily on weather and economic developments. Nutrition-based (NB) needs for 1988/89 are 29.4 million tons.

As a result of a 4% increase in cereal production in 1988, Egypt's SQ additional cereal needs have dropped to 2.6 million tons; NB needs are 0.0. Servicing the country's \$47 billion debt, however, threatens to seriously constrain food imports. Cereal production in Tunisia plunged 85% to 275,000 tons in 1988. Estimated production in 1989 will double the 1988 amount, but will remain well below the recent average of 1.4 million tons. SQ additional cereal needs total 1.2 million tons, with NB needs at 600,000 tons.

In India, higher than expected kharif grain harvests and soaring rice production have virtually eliminated additional SQ cereal needs and reduced NB needs to 2.9 million. Sri Lanka's 1989 rice production, on the other hand, is estimated at 1.42 million tons, 15% below 1988

levels and the lowest output in a decade, raising SQ and NB additional cereal needs to 202,000 and 189,000, respectively.

057

PN-ABC-320
MF \$2.16/PC \$15.73

Nutrition education for family planning workers

Smith, Sally S.

Development Associates, Inc.

U.S. Agency for International Development. Bureau for
Science and Technology. Office of Nutrition
(Sponsor)

Sep 1988, vi, 143p., En

Spanish ed.: PN-AAS-059

9311010

Nutrition counseling within the family planning (FP) setting is appropriate for several reasons. Not only can it help improve a woman's health status and thus her ability to bear a healthy, normal child and to care for the children she already has, but it can also help counteract the nutritional risks posed by certain contraceptives. This guidebook for incorporating nutrition education into FP services is divided into five units. Unit I provides an introduction to nutrition, covering the basic food groups and the concept of a balanced diet; the special dietary needs of pregnant mothers, lactating women, and young children; signs and consequences of malnutrition; and simple physical assessment techniques to determine nutritional status. Unit II covers the broad inter-relationships between nutrition and FP, including the effects of age, birth spacing, parity, and family size on the nutritional health of the mother and child; breastfeeding, nutrition, and FP interactions; and teaching methodologies for use in the FP context. Unit III focuses on the special effects of contraceptive methods on the nutritional health of the individual woman and is designed for one-on-one FP counseling situations. Unit IV reviews successful breastfeeding; common myths and misunderstandings regarding breastfeeding are discussed, as well as preparation for breastfeeding and the causes of and solutions to common problems. Unit V provides evaluation instruments for an overall summary review of the four previous units.

FOOD AND NUTRITION

058

PN-ABC-338
MF \$1.08/PC \$7.54

Rapid appraisal methodology for expenditure surveys : an evaluation of the Liberia model

Bonnard, Patricia

U.S. Dept. of Agriculture. Office of International Cooperation and Development. Nutrition Economics Group

U.S. Agency for International Development. Bureau for Science and Technology. Office of Nutrition (Sponsor)

Mar 1988, vi, 52p. : charts, statistical tables, En 9311171

The rapid appraisal technique used to collect household expenditure data for an A.I.D. food policy research project in Liberia is herein evaluated. The report is divided into eight sections. Section I defines and compares several types of surveys commonly used in food policy research and establishes the rationale behind rapid appraisal surveys, including the specific objectives of the Liberia study. Sections II-V evaluate, respectively, the survey design, sampling techniques, the questionnaire, and survey implementation. Each section describes the procedures of the first phase (i.e., interviewing period) of the survey as well as second and third phase alterations, and includes a theoretical discussion and some practical observations. Section VI describes data processing and analysis, while Section VII presents the results from each phase, focusing on whether these are consistent between phases as well as consistent with theory and with the present body of research. It was concluded that the term "rapid appraisal" aptly describes the survey, which required 2 weeks of data collection and 4 months of data processing and analysis (including document preparation) for each phase. The existence of seasonality, as in Liberia, necessitates additional interviewing periods, extending the total timeframe to just over a year. Recommendations, presented in Section VIII, address problems of error and enumerator bias, and propose modifications which would allow transfer of the methodology to other developing country contexts.

059

PN-ABC-433
MF \$1.08/PC \$1.56

Impact of economic policy and structure on patterns of food demand in Asia and the Near East

Goldman, Richard H.

Harvard University. Harvard Institute for International Development

U.S. Agency for International Development. Bureau for Asia and Near East. Office of Technical Resources (Sponsor)

(ANE/TR/ARD Strategy Symposium on Agriculture in the 1990's, Rosslyn, VA, US, 7-9 Sep 1988) Aug 1988, 12p. : statistical tables, En

While many countries in the Asia/Near East region have achieved impressive growth in per capita consumption of calories in the past few decades, others have been less successful. The countries in question have relied on a variety of policy instruments to achieve food consumption and other development objectives. Analysis shows, for example, that per capita consumption in some countries has been stimulated largely by pricing policy, while other countries have relied more on income growth, particularly in rural areas. A comparison also reveals that countries relied to varying degrees on production and trade policy to achieve consumption goals. In some countries the entire increment of Green Revolution-induced production was used to enhance per capita availability of cereals, while in others much of the added production was used for import substitution. There is also a group of countries in which, despite low agricultural growth, dramatic improvement in per capita food consumption was achieved through expansion of food imports. In the coming decade, demographic and economic factors suggest that growth in demand for cereal calories will slow down. At the same time, diet diversification, which is already underway, will continue. Part of this process will result in an increasing demand for coarse grains for animal feed to support expanding demand for poultry meat and eggs and for other feed-intensive protein sources. (Author abstract, modified)

060

***PN-ABC-570**
MF \$1.08/PC \$5.46

Food security policy and the competitiveness of agriculture in the Sahel : a summary of the 'beyond Mindelo' seminar

Jayne, Thomas S., ed.; Minot, Nicholas, ed.
Michigan State University. Dept. of Agricultural Economics
U.S. Agency for International Development. Bureau for Science and Technology. Office of Rural and Institutional Development (Sponsor)
U.S. Agency for International Development. Bureau for Africa. Office of Technical Resources (Sponsor)
(Beyond Mindelo Conference on Food Security Policy and the Competitiveness of Agriculture in the Sahel, Washington, DC, US, [1989])
1989, v, 27p. + attachment, En
MSU International Development Papers. Working paper, no.32
9311090
**Also available from: MSU International Development Papers, Dept. of Agricultural Economics, Agriculture Hall, Michigan State University, East Lansing, Michigan 48824-1039 USA*

The policy implications of recent research on food security in the Sahel are discussed in this workshop report. A major finding is that interrelated production and marketing constraints in the region have forced a significant portion of rural households to become net purchasers of food grains. In Mali and Senegal, for example, the marketed supply of coarse grains is produced primarily by a few relatively prosperous farmers in high-potential regions where market infrastructure is adequate. This concentration of grain production creates a serious food policy dilemma in these countries. While price incentives may benefit a few advantaged farmers, they have a negative impact on both urban consumers and a large segment of the rural population. The report discusses several market and trade policy alternatives aimed at breaking down barriers to small farmer production. Although there was a lack of consensus among workshop participants on whether and how to insulate domestic markets from world markets,

there was broad agreement that freer trade within the Sahel and West Africa in general is advisable. Participants also agreed that timely dissemination of price and transactions information would be instrumental in improving grain market efficiency as well as in raising the level of discussion between donors and governments.

061

PN-ABC-832
MF \$1.08/PC \$10.27

Coarse grain processing in Senegal : issues, constraints, and policy and program options

Holtzman, John S.
Abt Associates, Inc.
U.S. Agency for International Development. Bureau for Science and Technology. Office of Rural and Institutional Development (Sponsor)
May 1989, ix, 65p. : statistical tables, En
9365447

Hand-powered threshing, dehulling, and milling of coarse grains demand hours of female labor in most Senegalese rural households. These arduous tasks constrain the consumption of coarse grains vis-a-vis rice, a far easier grain to prepare. Various attempts to improve the processing of coarse grains in Senegal are discussed in this report, along with price, import, and tax policies that also affect their competitiveness. While about 90% of threshing and almost all dehulling are still performed by hand, about 3,000 motorized mills are in operation in the country. However, many of these mills have been donated to village groups by the Senegalese government and other agencies and have been managed collectively—with mixed results. Private mill management, although it comprises two-thirds of the total, faces many disadvantages, including import duties, value-added taxes, and a lack of credit opportunities and subsidies. Alternative, low-cost technologies exist for shelling maize and milling coarse grains by human (hand and bicycle) power and animal traction, but they do not appear widespread. The final section of the report proposes an A.I.D. action plan to improve grain processing through policy dialogue (to remove duties and value-added taxes on imports and sales of processing equipment), promotion of private sector grain processing and

FOOD AND NUTRITION

repair/maintenance services, and selective applied research.

062

***PN-ABC-917**

MF \$1.08/PC \$9.49

Food production in a land-surplus, labor-scarce economy : the Zairian basin

Tshibaka, Tshikala B.

International Food Policy Research Institute

U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture (Sponsor)

U.S. Agency for International Development. Bureau for Africa. Zaire (Sponsor)

Jun 1989, 70p. : charts, statistical tables, En

Research report / International Food Policy Research Institute, no.74

936411114

**Also available from: International Food Policy Research Institute, 1776 Massachusetts Ave. NW, Washington, DC 20036 USA*

Zaire's food supply has been deteriorating at an alarming rate for at least two decades, and most government agricultural projects have failed to reverse the trend. This report examines constraints to food production in the Zairian Basin, a tropical rain forest zone where most of the country's tree crops (i.e., coffee, cocoa, natural rubber, and palm oil), rice, and plantain are grown. The study indicates that, despite ready availability of land, the cultivated area per household in the region remains small and farm labor input is low. Only about 35% of labor time is spent on farming, while the remainder is allocated for activities such as hunting, fishing, and gathering. Agricultural productivity could be significantly increased in the area if labor input were increased, especially for land preparation, since labor productivity increases with the size of cultivated area. However, farmers in the Basin are discouraged by poor domestic prices for farm products and lack of capital. The report recommends that these constraints be alleviated through the development of infrastructure such as roads; transportation, distribution, and marketing facilities; and rural capital markets. The government should also invest in biological and chemical

technologies to improve the productivity of labor and other inputs, particularly for the production of cereal crops.

063

***PN-ABD-047**

MF \$3.24/PC \$31.46

Potato in the human diet

Woolfe, Jennifer A.

International Potato Center

U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture (Sponsor)

1987, xiv, 231p. : ill., charts, statistical tables, En

Published by Cambridge University Press

936411107

**Also available from: International Potato Center, P.O. Box 5969, Lima, Peru*

This book reviews literature on the consumption and nutritional aspects of the potato in developing countries. Chapter I introduces the reader to the structure and components of the potato. In Chapter II, the nutritional composition of the potato is compared with that of major food grains, roots, tubers, and vegetables. Contributions the potato can make to human dietary energy, protein, fiber, vitamin, mineral, and trace element requirements are discussed. Chapter III deals with factors affecting tuber nitrogen concentration and composition, and reviews feeding experiments which indicate the high quality of potato nitrogen (which contains protein constituents) for the diets of both adults and children. The recovery of protein from processing waste is also examined. Chapter IV analyzes the effects of cooking, processing, and storage on the nutritive value of potatoes. Chapter V examines current knowledge regarding potato glycoalkaloids, proteinase inhibitors, and lectins, which may have adverse effects on humans. Toxin production, effects, and reactions are highlighted, along with recommendations for controlling glycoalkaloids. In Chapter VI, some of the results of the International Potato Center's three-year study on potato consumption in developing countries are given to illustrate factors influencing potato consumption (e.g., price, quality, foreign cultural influence, etc.) and the ways potatoes are used in the human diet. Consumer survey information from Indonesia, Rwanda, Guatemala, and Peru is given special emphasis. (Author abstract, modified)

064

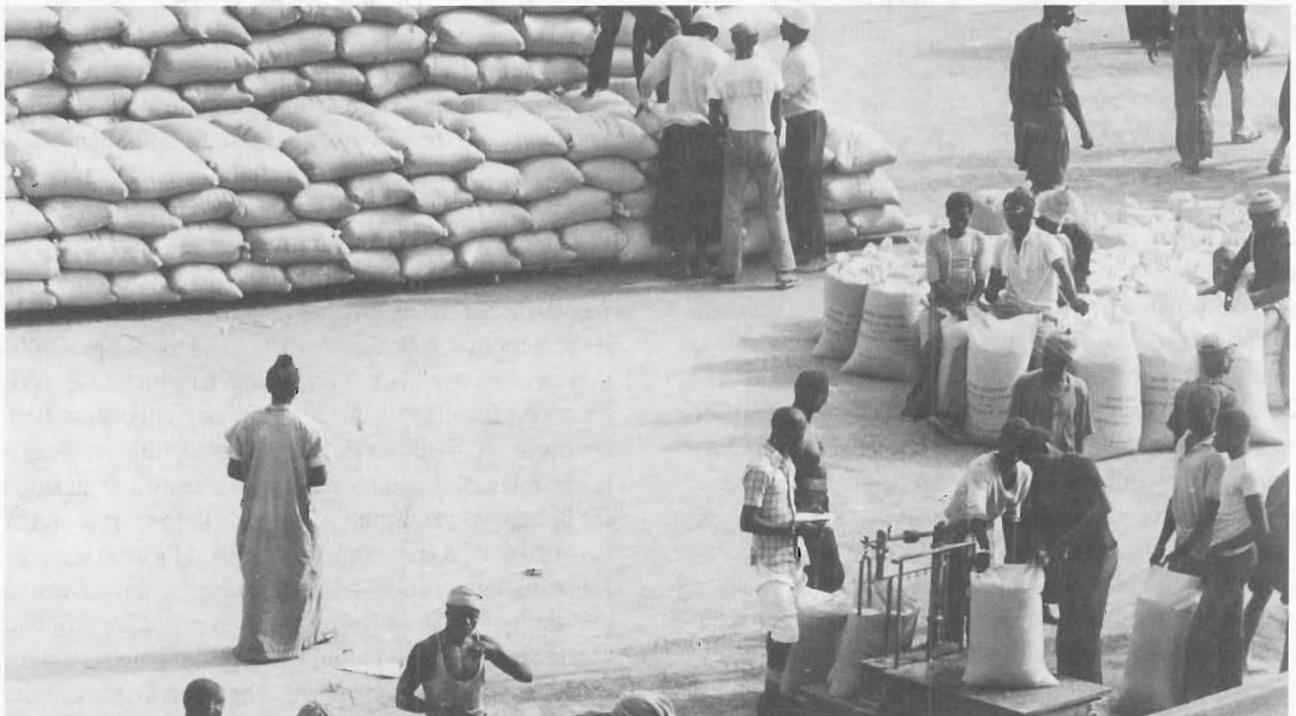
PN-ABD-132
MF \$2.16/PC \$14.69

Nutrition in Haiti : an analysis of problems and solutions

Mock, Nancy; Bertrand, Marie-Christine; et al.
Academy for Educational Development, Inc.
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Nutrition
(Sponsor)
U.S. Agency for International Development. Bureau for
Latin America and the Caribbean. Haiti (Sponsor)
Sep 1988, [85]p. + 4 annexes : charts, statistical tables,
En
521000003; 9365113

In 1985, 75% of deaths among Haitian children under age 5 were associated with or caused by malnutrition. This report describes and analyzes nutritional problems in Haiti and the nutrition activities that have been implemented by USAID/Haiti and other donors, especially in the area of nutrition education. Specifically, the report: (1) describes

the three major nutritional deficiencies in Haiti (protein-energy malnutrition, vitamin A deficiency, and nutritional anemia) and the magnitude of these deficiencies, and identifies populations that are especially at risk; (2) describes the major factors related to these problems which may be susceptible to education interventions; (3) assesses related constraints to behavioral change (i.e., socioeconomic and attitudinal variables); (4) describes the five models of nutritional interventions currently used to assist Haitian preschoolers (targeted supplementation with education, nutrition programs integrated into survival programs, nutritional services integrated into health services, untargeted supplementation and education programs, and education-based programs with community participation); (5) develops a framework to assess these programs; (6) identifies potentially replicable educational/growth monitoring/promotion approaches; and (7) identifies gaps or problems in intervention strategies that might be filled by USAID/Haiti's future nutrition activities. A key conclusion is that early infant feeding habits are often a key determinant of poor child health; comprehensive breastfeeding promotion programs are an important intervention strategy in this area.



Dock workers weigh and sack sorghum for shipment. Cereal crops must play a larger role in the Zairean basin if the deterioration of Zaire's food supply is to be reversed.

065

PN-ABC-270
MF \$1.08/PC \$6.24

Cost-effectiveness of immunization strategies in Ecuador

Shepard, Donald S.; Robertson, Robert L.; et al.

John Snow, Inc.

U.S. Agency for International Development. Bureau for Science and Technology. Office of Health

Harvard University. Harvard Institute for International Development

U.S. Agency for International Development. Bureau for Science and Technology. Office of Health (Sponsor)

U.S. Agency for International Development. Bureau for Latin America and the Caribbean. Ecuador (Sponsor)

10 Aug 1987, iii, 41p. : charts, statistical tables, En
5180015; 9365927

A national survey was conducted in Ecuador in June 1986 to compare the cost-effectiveness of two types of immunization services: (1) those provided at fixed facilities and (2) those provided through a mass campaign sponsored by A.I.D.'s PREMI Child Survival Project. The purpose behind the mass campaign, which gained wide popular and political support, was to accelerate immunization activities throughout the country and to complement services already provided by the Ministry of Health, the Social Security system, and private organizations. Results showed that the PREMI campaign contributed 13% to total immunization coverage of 64% and made significant contributions in vaccinating children less than two years of age. Cost analyses revealed that the average cost per dose was \$0.29 for fixed facilities and \$0.83 for the campaign. Total national costs were \$653,000 and \$1,667,000 for fixed facilities and the campaign, respectively. The cost per fully vaccinated child ranged from \$4.77 for routine services to \$8.13 for the PREMI campaign. On the basis of these figures, the authors conclude that the campaign, though more costly than routine services in fixed centers, had a strong impact on vaccination coverage of younger children who were previously missed by routine services. (Author abstract, modified)

066

PN-ABC-552
MF \$1.08/PC \$3.25

Technical assistance : professional development and career structures in international health

Mosley, W. Henry; Mauck, Christine

Johns Hopkins University. School of Hygiene and Public Health

U.S. Agency for International Development. Bureau for Science and Technology. Office of Health (Sponsor)
(Colloquium on International Health and Development in the 1990's, Baltimore, MD, US, 6-8 Apr 1988)
Apr 1988, 25p., En

This report evaluates international response to the complex health problems of the Third World, especially the child survival program spearheaded by UNICEF and now the major thrust of A.I.D.'s health effort. This program is currently targeted to immunize 80% of all children by 1990 and to make oral rehydration therapy (ORT) universally available. Four criticisms are made: (1) Because of underlying social and cultural factors, reduction in mortality from certain causes (e.g., diarrheal and vaccine-preventable diseases) does not necessarily reduce overall mortality. For example, The Gambia's infant mortality rates remain extraordinarily high, despite 80% immunization coverage. (2) The strategy's global immunization objective may not protect those who need it most or those most difficult to reach. (3) Monitoring often focuses on coverage rates, access to and use of ORT, and training of paramedical personnel rather than on the actual effect of these activities on health. (4) The trend toward privatization has directed funds to organizations with little experience or capability in health care and only short-term contracts to provide services. As a result, little progress is made in building and maintaining a scientific foundation for fighting global health problems. The report contrasts the child survival program with the world's most successful health intervention—smallpox eradication—stressing the ability of the latter program to adapt to different administrative, socio-cultural, and geographic situations, and to monitor program impact. The report then addresses the problem of improving recipient country capabilities through medical training and integrated health developmental strategies. Recommendations are included.

067

*PN-ABC-591
MF \$1.08/PC \$4.16**INTRAH training information packet (INTRAH TIP) : sterilization, disinfection, decontamination and cleaning of FP/MCH clinic equipment**

Angle, Marcia; Cole, Eugene; Murphy, Catherine
University of North Carolina at Chapel Hill. School of
Medicine. Program for International Training in
Health

U.S. Agency for International Development. Bureau for
Science and Technology. Office of Population
(Sponsor)

Mar 1989, [27]p. : statistical tables, En
9363031

**Also available from: Program for International
Training in Health, School of Medicine, University of
North Carolina at Chapel Hill, Campus Box 8100,
208 North Columbia St. Chapel Hill, NC 27514 USA*

Family planning (FP) and maternal child health (MCH) clinical personnel are increasingly concerned about preventing the spread of the AIDS virus and other disease-causing micro-organisms through contaminated needles, syringes, and other clinical equipment. This manual presents technical information on the sterilization, disinfection, and decontamination of FP/MCH equipment. Individual sections list and explain: (1) procedures that kill disease-causing micro-organisms; (2) when to use what procedure; (3) why cleaning instruments and equipment prior to sterilization, disinfection, or decontamination is important; (4) methods of sterilization (steam, dry heat, boiling, and cold sterilization); (5) methods of conducting high-level disinfection (chlorine-releasing solutions, iodofor solutions, alcohols, other solutions); (6) methods of decontamination; (7) when to use and when not to use antiseptics; (8) which method (sterilization, high-level disinfection, or decontamination) to choose for different types of equipment (a pull-out wall chart summarizing this information is included); and (9) when and how to use sterile gloves.

068

PN-ABC-830
MF \$2.16/PC \$18.33**Infant feeding patterns, practices and trends : selected Asia / Near East countries**

Baumslag, Naomi; Putney, Pamela J.

Devres, Inc.

U.S. Dept. of Health and Human Services. Public Health
Service. Office of International Health (Sponsor)

U.S. Agency for International Development. Bureau for
Asia and Near East (Sponsor)

May 1989, iv, 144p. : ill., charts, statistical tables, En
RSSA/BAS-0249-R-HI-4208-00

Although exclusive breastfeeding for the first 4–6 months of life is probably the single most cost-effective child survival measure available and the infant's primary defense against infection, this review of 16 countries in the Asia/Near East region indicates alarming evidence of merely partial and temporary breastfeeding. Advice from health

Supplementation with formula is particularly widespread in Pakistan, Thailand, the Philippines, Yemen, and Indonesia. These substitutes are linked to high rates of diarrheal disease and death due to bottle contamination and the lack of sufficient income to buy adequate amounts of formula.

workers to bottlefeed, separation of mother and child due to work time, and free samples of formula appear to be universal deterrents to breastfeeding. The trend also seems to be associated with (but not necessarily causally related to) higher education, upper socioeconomic status, urban residence, employment outside the home, certain ethnic groups, and the use of oral contraceptives. Supplementation with formula is particularly widespread in Pakistan, Thailand, the Philippines, Yemen, and Indonesia. These substitutes are linked to high rates of diarrheal disease and death due to bottle contamination and the lack of sufficient income to buy adequate amounts of formula. Many mothers in the region also endanger their infants by discarding

HEALTH

colostrum and replacing it with prelacteal feeds such as olive oil or honey. This practice interferes with the establishment of effective lactation, deprives the newborn of critical anti-infective substances, and can lead to infection or even suffocation. Many mothers also reportedly discard their breastmilk when they have been in the sun or have not breastfed for a period of time, believing that the milk has spoiled. In addition to country-specific information on infant feeding patterns, the report provides recommendations for improving child survival efforts.

069 **PN-ABC-995**
MF \$1.08/PC \$4.94

HIV infection and AIDS : a report to Congress on the USAID program for prevention and control

U.S. Agency for International Development
Jul 1989, 36p. : charts, statistical tables, En

The incidence of AIDS in the developing world is believed to be far greater than official figures indicate, with half of all Latin American cases and 80%–90% of African cases thought to be unreported. This paper describes A.I.D.'s efforts to help developing countries build long-term AIDS prevention and control programs. The cornerstone of A.I.D.'s effort involves support to the World Health Organization's Global Program on AIDS (WHO/GPA), which provides leadership in the development of national and international programs; coordinates and supports biomedical, epidemiological, and social/behavioral research; and collects and disseminates information to monitor the pandemic. A.I.D. funding makes up about 25% of the WHO/GPA budget. Within the framework of the WHO/GPA strategy, A.I.D. also provides bilateral assistance to 43 countries by providing commodities, technical assistance, and training. Two major activities are: (1) AIDSCOM, which aims to develop effective public health communication strategies, prevention counseling approaches, and methods for marketing condoms, and (2) AIDSTECH, which provides technical assistance and training in high-risk behavior change, identifying effective and affordable methods for keeping blood supplies free of

HIV, monitoring the pandemic, and improving the logistics of condom distribution. A.I.D. also provides support to a variety of private voluntary organizations.

070 ***PN-ABC-999**
MF \$5.40/PC \$51.87

Community nutrition action for child survival

Centre for Development and Population Activities
U.S. Peace Corps. Office of Training and Program Support. Information Collection and Exchange (Sponsor)

U.S. Agency for International Development. Bureau for Science and Technology. Office of Nutrition (Sponsor)
Jan 1989, x, 445p. : ill., charts, En
9311010

**Also available from: Peace Corps, Information Collection and Program Exchange, Office of Training and Program Support, 1990 K Street, NW, Washington, DC 20526*

Based in part on materials developed and field tested by the Peace Corps in Indonesia, Nepal, Kenya, and Senegal, this manual presents a training program for managers of community-based nutrition programs. Part One provides up-to-date information about the nutrition and health problems of women and young children and examines six key areas for community action: (1) growth monitoring; (2) breastfeeding promotion; (3) home and village production of weaning foods; (4) oral rehydration therapy; (5) immunization; and (6) family planning. Part Two provides instruction on the diagnosis and community-participatory treatment of nutrition problems. Topics include nutrition project planning (including selection of interventions), work planning, budgeting, and proposal writing. Part Three examines the project management systems necessary for training, supervising, and evaluating community health workers and activities. Participatory and experiential methodologies are suggested throughout these modules to facilitate the development of problem solving, planning, and communication skills. Adaptation of the manual to local conditions is strongly urged.

071

***PN-AAZ-200**
MF \$8.64/PC \$90.74

Organizing for effective family planning programs

Lapham, Robert J.; Simmons, George B.

National Academy of Sciences. National Research Council. Commission on Behavioral and Social Sciences and Education. Committee on Population and Demography

U.S. Agency for International Development. Bureau for Science and Technology. Office of Population (Sponsor)

1987, xiii, 706p. : charts, maps, statistical tables, En
Published by National Academy Press
9320643

**Also available from: Committee on Population, Commission on Behavioral and Social Sciences and Education, National Research Council, 2101 Constitution Ave., NW, Washington, DC 20418 USA*

Although family planning (FP) programs now exist in most Third World countries, they differ enormously in their attainment of program goals. This document describes specific program elements and their contribution to FP program effectiveness. Discussed in turn are (1) the environment of FP programs (including the social and political environment, the task environment, the effect of contraceptive technology on program environment, and funding resources); (2) program management and program elements (e.g., structural issues related to delivery systems, operational planning issues, integration of FP with health programs, training, supervision, demand generation, logistics, etc.); (3) special modes of delivery (community-based distribution, contraceptive social marketing, the role of private physicians); (4) client-provider transactions (in FP clinics, community-based programs, commercial distribution systems); and (5) methodological issues in measuring inputs, cost-effectiveness, and the impact of FP programs on fertility). The document's findings in the above-noted areas are synthesized in a final chapter. An overall conclusion is that while a favorable environment, strong demand for contraception, and supportive political leadership are the general ingredients of effective FP programs, proper design and implementation remain the key to program effectiveness.

072

PN-ABD-066
MF \$2.16/PC \$19.37

Final research findings : Tulane family planning operations research in the English speaking Caribbean (contract AID/DPE-0632-C-00-2007-00)

Bertrand, Jane T.; Russell-Brown, Pauline;

Landry, Evelyn

Tulane University

U.S. Agency for International Development. Bureau for Science and Technology. Office of Population (Sponsor)

Jun 1986, 147p. : ill., statistical tables, En
9363030

Operations research in the area of family planning has proved useful in identifying barriers to contraceptive use, resolving these problems, and testing new approaches to service delivery. The results of operations research carried out by Tulane University in six English-speaking Caribbean countries are presented in this report. Part I analyzes nonclinical approaches to contraceptive distribution. Specifically, it focuses on employer-based distribution in St. Lucia, the use of community health aides in St. Vincent, the cost-effectiveness of volunteer distributors vs. outreach workers in Jamaica, and contraceptive social marketing in Barbados, St. Lucia, and St. Vincent. The remainder of the report focuses on two unconventional targets of family planning programs—men and teenagers. Part II discusses strategies for reducing male opposition to family planning in Dominica, while Part III examines four issues related to reducing teenage pregnancy: (1) the effect of family life education on knowledge, onset of sexual activity, and contraceptive use in St. Kitts and Nevis; (2) the feasibility of operating adolescent clinics in Dominica; (3) adolescent clinics and peer counseling to combat teenage pregnancy in St. Lucia; and (4) delaying a second pregnancy in teenage mothers in Barbados.

POPULATION

073

PN-ABD-243
MF \$1.08/PC \$8.84

Health financing in Africa : tracking the A.I.D. experience of the child survival emphasis countries

Evlo, Kodjo

John Snow, Inc.

U.S. Agency for International Development. Bureau for Science and Technology. Office of Health (Sponsor)

Jun 1989, ii, 62p. : statistical tables, En
9365927

Although the effect of macroeconomics on the financing of health care in African countries has been fairly well discussed in recent literature, a database that includes the evolution of major health indicators is needed. There has not yet been a comprehensive database developed that describes the organization and the financing of health and family planning services in child survival emphasis countries. Such a database can assist country officials in tracking the development of their country. It can also serve as a reference for A.I.D., other donor institutions, and the countries themselves in planning ways to improve and sustain health services. The objective of this study is to present such a database on health services, financing, and family planning in the African child survival emphasis countries. This database provides information on the organization and the financing of health and family planning services. It can be used for evaluation of health and family planning policies in each of the eight countries. This study also indicates how much data actually exist. Recom-

mendations are made regarding what efforts can be made to improve the quality and quantity of the existing data. (Author abstract)



Villagers in Dourbali, Chad line up at the "fair" table, where mobile health team aides dispense medicines.

074

PN-AAX-221
MF \$1.08/PC \$8.19

Role of urbanization in national development : bridging the rural-urban divide

Mason, John P.

U.S. Agency for International Development. Bureau for Program and Policy Coordination. Center for Development Information and Evaluation

Jul 1989, ix, 43p. + attachments : charts, statistical tables, En

A.I.D. program evaluation discussion paper, no.27

Since the late 1960's, A.I.D. and much of the donor community have adopted rural-based development strategies—often deemphasizing urbanization or even considering it as a problem. This paper discusses the importance of urbanization in overall national development, with a specific focus on rural-urban linkages. It is argued that urbanization in developing countries falls along a continuum of two extreme theoretical types: Type I, in which urbanization contributes to national economic growth; and Type II, in which it is coincident with inadequate growth and even underdevelopment. Generally, countries in the Near East share characteristics of Type I, sub-Saharan countries share characteristics of Type II, while Asian and Latin American nations share a mixture of both types. Government policies affecting human settlement and economically motivated rural-to-urban migration have been two key factors influencing urbanization. Equally important is the character of rural-urban linkages, which encompass economic, technological, spatial, infrastructural, financial, administrative, and participant (e.g., producer, processor, distributor, consumer, etc.) aspects. An A.I.D.-funded study of Kutus Town, Kenya, is cited to illustrate these features.

According to the report, rural-urban linkages in Type I urbanization actively contribute to dynamic market systems, while linkages in Type II environments fail to create opportunities for increased employment or income generation. In reaction to the usual separation of rural and urban planning, an analytical framework for rural-urban linkage development, called ARULINKED or "Are You Linked?," is developed based on A.I.D.'s 15-year experience of

trying to capture and channel energies that reinforce both rural and urban development. This framework examines patterns of migration, backward linkages, off-farm employment, urban poverty, and mega-city growth. ARULINKED is also used to generate illustrative questions—posed in terms of macro- and sector-level analysis and planning issues—to guide project designers and Mission strategists toward a new view of urbanization.

075

PN-ABC-443
MF \$1.08/PC \$2.86

Institutional sustainability and rural development : issues for Asia and the Near East in the 1990's

Goldsmith, Arthur A.

University of Maryland at College Park. Colleges of Agriculture and Life Sciences. International Development and Management Center

U.S. Agency for International Development. Bureau for Asia and Near East. Office of Technical Resources (Sponsor)

(ANE/TR/ARD Strategy Symposium on Agriculture in the 1990's, Rosslyn, VA, US, 7-9 Sep 1988)

Aug 1988, 19p., En

In response to the current U.S. development strategy, this paper examines, with special reference to Asia and the Near East, factors affecting the sustainability of two sets of institutions central to rural development: (1) agricultural colleges and universities and (2) public agencies responsible for area or regional development projects.

While institutional sustainability is not always either feasible or desirable, its likelihood is improved when an organization can adapt itself to its environment and align its operations with its resource endowment. Harmonizing these internal and external elements is the role of organizational strategy. A.I.D. and other donors, however, have tended to focus efforts regarding project management on administrative functions (e.g., budgeting, accounting) to the neglect of its entrepreneurial dimension, i.e., strategic planning and implementation. As in the private sector, entrepreneurship in the public sector denotes the ability to develop an organization and significantly alter the existing pattern of resource allocation. It is increasingly evident

HUMAN SETTLEMENTS

that creative leadership of this sort is key to developing sustainable institutions.

Though often considered a unique and non-replicable charism, strategy formulation is in fact a transferable skill. If A.I.D. is to increase the chances for institutional sustainability in the 1990's, it will have to develop a new approach to management training and project design, placing greater emphasis on: managerial choice, developing organizational strategies, evaluating environmental conditions realistically, anticipating change, and staying within institutional limits. (Author abstract, modified)

076 **PN-ABC-687**
MF \$1.08/PC \$3.64

Tenure policy and natural resource management in Sahelian West Africa

Lawry, Steven W.
University of Wisconsin, Madison. Land Tenure Center
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Rural and
Institutional Development (Sponsor)
Feb 1989, vi, 24p., En
LTC paper, no.130
9365301

In the Sahel, state involvement in natural resource management is direct and extensive, with states claiming ownership of communal property resources such as grazing land, forests, fisheries, wildlife, and wetlands. This paper considers the impact of current tenure policies on resource management and identifies opportunities for reform. Three major weaknesses in the current policies are identified. (1) Local communities lack the legal standing to control resource use, and national resource management strategies provide few economic incentives at the local level. This centralized approach has led to an increase in environmental degradation in some areas. (2) State ownership of land and ambiguous long-term land rights discourage farmers from investing in desirable technologies and management practices. (3) Current forest codes, and especially aggressive and arbitrary rule enforcement, have increased the costs and uncertainty of tree production, reducing farmer incentives to plant trees. Case studies of the Niger River Delta in Mali, the Guesselbodi Forest

Reserve in Niger, and Mali's forest code illustrate these issues. Suggestions for national legal reform, applied research to develop and test promising reform models, and participatory land use planning are presented.

077 **PN-ABC-688**
MF \$1.08/PC \$6.37

Land tenure and investment in African agriculture : theory and evidence

Barrows, Richard; Roth, Michael
University of Wisconsin, Madison. Land Tenure Center
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Rural and Institutional
Development (Sponsor)
Feb 1989, 47p., En
9365301

Traditional African systems of communal land tenure are increasingly viewed as inefficient by international economists. Donor agencies such as the World Bank and A.I.D. now support the individualization of land tenure, claiming that it would increase tenure security and agricultural investment. This article uses economic theory and empirical evidence from Kenya, Uganda, and Zimbabwe to analyze the individualization hypothesis. Two major weaknesses in the hypothesis are identified. First, the economic theory used to analyze land tenure is an overly narrow application of economic principles. A broader theoretical perspective that uses some elements of institutional economics and the theory of imperfect markets would provide more insight into the behavioral response to the shift from traditional tenure to individualized tenure. Second, whether individualization is preferable to the evolving system of traditional tenure in attaining specific agricultural development objectives is an empirical question that cannot be resolved by theory alone. That is, the effects of individualization are determined by the context in which the tenure policy is applied. The paper recommends that policymakers consider alternatives to individualization, including policies that simply remove impediments to the evolution of traditional systems. (Author abstract, modified)

078

PN-ABC-846
MF \$1.08/PC \$4.03

When the state sidesteps land reform : alternative peasant strategies in Tungurahua, Ecuador

Forster, Nancy R.

University of Wisconsin, Madison. Land Tenure Center
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Rural and Institu-
tional Development (Sponsor)

U.S. Agency for International Development. Bureau for
Latin America and the Caribbean. Ecuador (Sponsor)

Apr 1989, iii, 28p. : statistical tables, En

LTC paper, no.133

9365301

Ecuador has not had a meaningful land reform, yet peasants have maintained a determined campaign to bring land into their own domain. This report focuses primarily on two generations of peasants in Santa Lucia Arriva, Tungurahua Province, who have acquired land primarily through

A primary factor in the peasants' survival has been the absence of subsidies for large-scale, capital-intensive agriculture, which has encouraged large landowners to sell their property and turn to urban occupations.

conversion of common grazing land or with capital earned during periods of labor migration. According to the report, the experience of these peasants directly challenges the Marxist-Leninist theory that *minifundio* holdings are not economically viable. Primarily as a result of regional and national economic conditions, many of the peasants were able to purchase enough land to maintain their status over the generations under study. A primary factor in their survival has been the absence of subsidies for large-scale, capital-intensive agriculture, which has encouraged large landowners to sell their property and turn to urban occupations. Moreover, Ecuador's limited industrial development has prevented the massive peasant exodus to the

cities experienced by many other Latin American countries. However, the tightening of the land market in recent decades suggests that the free market is unlikely to provide enough land for the peasant class in the future. Furthermore, agricultural expansion into the *paramo*, high-altitude grazing lands, has had high environmental costs, and continued degradation could threaten agriculture in the entire region.

079

PN-ABC-898
MF \$1.08/PC \$4.16

Farmland transfers and the role of land banks in Latin America

Stringer, Randy

University of Wisconsin, Madison. Land Tenure Center
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Rural and Institu-
tional Development (Sponsor)

Apr 1989, iii, 29p., En

LTC paper, no.131

9365301

Despite agrarian reform in many Latin American and Caribbean nations, rural unemployment remains high, food consumption outpaces production, and landholdings are highly concentrated. This paper examines the effects of land policies, institutions, and ownership patterns on farmland transfers in the region. Attention is focused on farmland financing programs, which have often been used in industrialized countries (the U.S. program is detailed) to provide access to land for the landless and overcome land-market inefficiencies. The report describes four such programs in the Latin America/Caribbean region—two successful examples of private development foundations providing funds for land purchases by groups of campesinos (in Guatemala and Ecuador), and two proposed but unimplemented programs (Brazil and St. Lucia). A final section of the paper examines the potential for land financing programs in the region and addresses three concerns related to their design and implementation: the availability of funds, land appraisals, and the effects of land policies.

HUMAN SETTLEMENTS

080

*PN-ABD-100
MF \$2.16/PC \$14.95

Financing governmental decentralization : the case of Bangladesh

Schroeder, Larry, ed.

U.S. Agency for International Development (Sponsor)
1989, xii, 215p. : map, statistical tables, En
Westview special studies in social, political, and
economic development

Published by Westview Press

Includes index and glossary

**Also available from: Westview Press Inc.,
5500 Central Ave., Boulder CO 80301 USA*

Despite the increasing role of local governments in implementing decentralization policies in Third World countries, little information is available on the most effective ways in which local governments can mobilize the financial resources needed for this task. This book analyzes

local government fiscal systems in Bangladesh, a country which, by reason of its scarce natural resources, rapid population growth, and the economic dominance of the rural sector, is representative of other low-income nations. The book focuses on methods by which local governments are financed and how they may be strengthened by new or improved financial instruments under current decentralization policies; it also highlights administrative and political constraints faced at both the central and local levels. After an overview of governmental decentralization in Bangladesh, individual chapters are devoted to: (1) the local government structure within which decentralization operates; (2) intergovernmental grants and ways in which they can be improved; (3–5) the structure, administration, and equity aspects of three forms of property-related taxation that are likely to provide the basis for further strengthening of the resource mobilization capabilities of local governments—the immovable property transfer tax, the land development tax, and the holdings tax; (6–7) two other sources of local revenue—business taxes/fees and local contributions and voluntarism. A final chapter summarizes the study's findings, noting both the benefits and costs of fiscal reform.

ENVIRONMENT AND NATURAL RESOURCES

081

PN-ABB-566

MF \$1.08/PC \$10.79

Mali : a country profile

Hall, Mark W.

Labat-Anderson, Inc.

U.S. Agency for International Development. Office of
U.S. Foreign Disaster Assistance (Sponsor)

Nov 1988, iv, 77p. : charts, maps, En

PDC-0000-C-00-8153-00

The Sahelian droughts of 1973–74 and 1984–85 decimated Mali's livestock herds, once the country's greatest resource, and forced the urbanization or emigration of many nomads, the dominant population group. This country profile focuses on the degree of Mali's ability to prepare for and withstand future droughts and other disasters. Section I provides general information on the country's culture, economy, and natural resources. In Section II, the report analyzes major environmental issues and assesses the nation's vulnerability to drought, crop pest infestations, and disease. The final section provides an overview of disaster preparedness and assistance, with a description of indigenous and foreign drought-related agencies and early warning systems as well as Mali's health care, water and energy resources, and physical infrastructure (i.e., shelter, roads, railroads, ports, and airports). According to the report, Mali's natural susceptibility to drought is exacerbated by human pressures. Firewood collection, overcultivation, faulty development projects, and a lack of soil and water conservation all contribute to the cycle of aridity. As one of the poorest nations in the world, Mali faces an especially difficult challenge in addressing these problems.

082

PN-ABB-567

MF \$2.16/PC \$24.96

Philippines : a country profile

Henderson, Faye I.

Labat-Anderson, Inc.

U.S. Agency for International Development. Office of
U.S. Foreign Disaster Assistance (Sponsor)

Dec 1988, v, 184p. : charts, maps, statistical tables, En

PDC-0000-C-00-8153-00

The Philippine archipelago is subject to virtually every type of natural disaster, including typhoons, flooding, landslides, earthquakes, volcanic eruptions, tsunamis, drought, epidemics, and fires. The country's vulnerability to these disasters is assessed in this report, following general information on national customs, economy, and politics. According to the report, a clear link exists between the incidence of natural disasters and the deterioration of the country's natural resources. This is especially evident in the impact of deforestation, which by 1980 had destroyed 5 million ha—almost one-third of the total forest area—1.4 million of them in critical watershed areas. The removal of forests in watershed areas has aggravated flooding and landslides by reducing the water-holding capacity of the soil on hillsides. Soil erosion from the loss of vegetation has not only depleted the soil of nutrients but also allowed rapid runoff of rainwater, as well as sediment build-up in rivers, reservoirs, and drainage channels. Siltation has decreased the storage capacity of riverbeds and reservoirs and reduced the life span of dams associated with the reservoirs. Final sections of the report provide an overview of the Philippines' disaster preparedness, covering host country institutions, warning systems, and resources (i.e., food, medical care, housing, communication, and transportation), as well as U.S. government and voluntary agencies and international donors.

ENVIRONMENT AND NATURAL RESOURCES

083

PN-ABC-110
MF \$1.08/PC \$8.84

Manejo de los recursos naturales y del medio ambiente en Centro America : una estrategia para la A.I.D. = Environmental and natural resource management in Central America : a strategy for A.I.D. assistance

U.S. Agency for International Development. Bureau for Latin America and the Caribbean

U.S. Agency for International Development. Bureau for Latin America and the Caribbean. Regional Office for Central American Programs

[1989], 64p. : statistical tables, En, Es

Guidance for this A.I.D. environmental strategy for Central America derives from three major sources—the recommendations of the Kissinger Bi-Partisan Commission, the conclusions of H. Jeffrey Leonard's landmark study, "Natural Resources and Economic Development in Central America," and A.I.D.'s policy paper on environment and natural resources (PN-AAV-464). The strategy covers a 10-year period (FY89–FY98) and proposes a funding level of \$400–\$650 million. This report describes current trends toward environmental degradation in Central America, and enumerates institutional, cultural, and technical constraints on actions to reverse these trends. It then presents the A.I.D. assistance strategy, which focuses on five program areas: sustainable agriculture; production from natural forest; management of wildlands and protection of biodiversity; management of critical watersheds; and policies, institution building, and environmental education. In a broad sense, the strategy draws its inspiration from Leonard's warning that development plans for Central America will fail "unless they contain ambitious measures to replant the region's forests, protect its critical watersheds, rehabilitate its degraded lands, and help its desperately poor small farmers to earn a decent living by sustainable farming measures."

084

*PN-ABC-336
MF \$1.08/PC \$8.45

Land husbandry : a framework for soil and water conservation

Shaxson, T.F.; Hudson, N.W.; et al.

Soil and Water Conservation Society

World Association of Soil and Water Conservation

U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture (Sponsor)

1989, 64p. : ill., charts, En

9364021

**Also available from: Soil and Water Conservation Society, 7515 Northeast Ankeny Road, Ankeny, IA 50021-9764 USA*

Soil erosion threatens millions of hectares of land around the world, particularly in Third World countries where growing populations are forced to intensively cultivate steep, marginal lands. This report presents the proceedings of a 1987 workshop in which 132 conservationists from 27 countries compared experiences with erosion problems on steep lands, and is intended to be a general discussion of this complex problem. The report discusses land use planning, principles of land husbandry, and the specific application of these principles on sloping lands. Participants generally agreed that the past approach of building large structures such as reservoirs to improve land management had proved disruptive to farmers' objectives and too difficult for farmers to maintain. Instead, participants saw structural measures as complementing improved land husbandry practices in combatting steep slope erosion. Three fundamental concepts were put forward. (1) It is essential to engage farmers in improving land husbandry practices. (2) The more fragile the land, the more crucial it becomes to establish a dense and long-lasting soil cover with useful plants and plant residues. (3) If runoff is unavoidable, it is imperative to reduce runoff velocity and encourage the progressive formation of steps that reduce land slope.

ENVIRONMENT AND NATURAL RESOURCES

085

PN-ABC-597
MF \$1.08/PC \$10.92

Peru : an assessment of biological diversity

Gow, David; Clark, Kate; et al.
Development Strategies for Fragile Lands
Development Alternatives, Inc.
Tropical Research and Development, Inc.
Earth Satellite Corp.
Social Consultants International
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Rural and Institutional
Development (Sponsor)
U.S. Agency for International Development. Bureau for
Latin America and the Caribbean. Peru (Sponsor)
Jan 1988, xii, 72p. + annex, En
5270000; 9365438

In terms of biodiversity, Peru is among the three richest South American countries, along with Brazil and Colombia. After an introductory section, Chapter II of this report assesses Peru's capacity to preserve this wealth, describing the country's major conservation threats, its protected areas system, and the economic aspects of biodiversity (including nature tourism, the consumption and sale of wild plants and animals, and investments in germplasm banks and in natural forest management). Chapter III examines the impact of development activities on the country's natural resources. Since development of the selva areas has been a governmental priority, these projects (highway construction, timber extraction, petroleum exploration, and planned and spontaneous colonization) are emphasized. Deforestation, which has often resulted from the selva projects, is attributed primarily to: structural factors (i.e., poverty, skewed land distribution, low agricultural productivity, and lack of viable economic alternatives), fluctuating government commitments, an emphasis on short-term agricultural gains, and lack of institutional sustainability and capability. Chapters IV and V discuss endangered and economically important plant and animal species in Peru and address major constraints to preservation of biodiversity. Chapter VI reviews the institutional context for environmental management and details a proposed reorganization and decentralization of

the Ministry of Agriculture. Recommendations, presented in Chapter VIII, focus on establishing a conservation policy and education programs, integrating conservation issues into development activities, conducting research, and training and institution building activities. Includes 6-page bibliography.

086

PN-ABC-922
MF \$3.24/PC \$35.75

Environmental profile of Pakistan

Pakistan. Ministry of Housing and Works. Environment and Urban Affairs Division
U.S. Agency for International Development. Bureau for Asia and Near East. Pakistan (Sponsor)
Dec 1988, xiii, 233p. : charts, maps, statistical tables, En

With only 5% of its land under forests, Pakistan is especially vulnerable to deforestation. This report describes the extent of Pakistan's deforestation problem as well as environmental issues related to the country's aquatic and atmospheric ecosystems, wildlife resources, human settlements and health, food and energy resources, and tourism. Background information on Pakistan's geography, biodiversity, and culture is also provided. Major problems are identified as: (1) deforestation leading to soil erosion, desertification, and flooding (more than 60% of the land is already or likely to be affected by desertification); (2) irrigation, which has created waterlogging (2 million ha) and soil salinization (4.2 million ha); and (3) increased water pollution (due to siltation, biological contamination, industrial effluents, and agricultural chemicals), which is a major threat to human health and to the fishing industry, a primary source of foreign exchange. The report also describes the country's efforts to combat these problems through institutions, legislation, and public education campaigns. Several weaknesses in the government's response are raised, including a lack of integration between conservation and development, inadequate coordination among environmental institutions, the narrow focus of environmental legislation, and the absence of agencies to enforce these laws.

ENVIRONMENT AND NATURAL RESOURCES

087

PN-ABC-997

MF \$1.08/PC \$12.61

Settlement in forest reserves, game reserves and national parks in Uganda : a study of social, economic and tenure factors affecting land use and deforestation in Mabira Forest Reserve, Kibale Forest Reserve and Kibale Game Reserve/Corridor

Aluma, John; Drennon, Christine; et al.
University of Wisconsin, Madison. Land Tenure Center
U.S. Agency for International Development. Bureau for
Africa. Uganda (Sponsor)
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Rural and Institutional
Development (Sponsor)
Jul 1989, ivx, 64p. : maps, statistical tables, En
LTC research paper, no. 98
9365301

Kibale Forest Reserve, Kibale Game Reserve/Corridor, and Mabira Forest Reserve provide the focus for this study of the social and economic factors behind agricultural encroachment and deforestation in Uganda's park and reserve areas. About 60,000 settlers dwell in Kibale reserve areas, most of them in the Game/Reserve Corridor, large-scale settlement of which began in the late 1950's. Virtually the entire Corridor has been claimed for agricultural purposes under customary tenure arrangements, until recently with little or no official resistance. Settlement in the Mabira Forest Reserve did not begin until the mid-1970's, mainly as the result of the government's "double production" and "freedom to settle anywhere" policies. The first eviction of settlers from the Mabira Forest Reserve in September, 1988, signaled the current desire of the government to return the country's affected areas to their original uses. However, given the history of settlement in the area, the high social costs of eviction, and the suitability of the land for farming, the report recommends that the Kibale Game Reserve/Corridor be publicly declared as no longer a reserve area, and those already settled there granted permanent residence. The 5,000 people in the Kibale Forest Reserve should be relocated to the Game

Reserve/Corridor, which possesses surplus land for farming purposes. Settlers in the Mabira Forest Reserve, an important national asset, should be required to leave—diplomatically, with areas of resettlement identified. Action on Uganda's remaining reserve and park areas should be taken on a case-by-case basis. The underlying causes of encroachment also need to be addressed.

088

PN-ABC-848

MF \$2.16/PC \$25.22

Guidelines for maintenance management in water and sanitation utilities in developing countries

Wyatt, Alan
Camp Dresser and McKee, Inc.
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Health (Sponsor)
Jun 1989, viii, 207p. : charts, statistical tables, En
WASH technical report, no.63
WASH activity no.421
9365942

A maintenance management system is not a set of technical procedures for improving maintenance performance, but a means of ensuring that the correct activities are scheduled and performed at the right time and in an efficient and cost-effective manner. This manual presents guidelines for developing such a system for medium to large water supply and sanitation organizations in developing countries. The guidelines do not present rigid procedures, but basic principles and practices, along with a discussion, where appropriate, of alternative approaches. The manual recognizes that each case is different and tries to help the reader grasp the essential elements and adapt the details to his or her own situation. Examples, forms, and illustrations from a variety of countries are included. The manual covers the following elements of a complete maintenance management system: (1) planning and organizing, including goal setting, task identification and description, resource requirements, annual plan and schedule, and staff organization and training; (2) work order systems; (3) equipment records; (4) materials inventory controls, and (5) monitoring, evaluating, and reporting. A detailed list of references is included, along with appendices which

ENVIRONMENT AND NATURAL RESOURCES

provide additional examples, blank forms, sample planning, budgeting, and recordkeeping techniques, a list of training resources, and brief discussions of computerized maintenance management and the contracting of maintenance services. (Author abstract, modified)

089

PN-ABD-005

MF \$4.32/PC \$40.04

Training guide for a management development program in water and sanitation institutions

Edwards, Daniel B.; Salt, Edward
Camp Dresser and McKee, Inc.

U.S. Agency for International Development. Bureau for
Science and Technology. Office of Health (Sponsor)

Jul 1989, vi,[357]p., En

WASH technical report, no.59

WASH activity no.345

9365942

Sound management development programs are a major technical assistance need of Third World water and sanitation institutions. This manual presents a three-phase train-

ing program which teaches the modern management concepts and skill-building techniques needed to enhance management effectiveness. Based on successful field work in Sri Lanka, the manual is designed for use by project designers, managers, and trainers, and includes handouts, case studies, and other materials needed for a complete training program. Also included is practical guidance to enable users to adapt the manual to specialized uses. Phase I introduces basic management theories and methods: organization and delegation of work, monitoring and follow-up, collaboration and feedback, effective communication, team building, conducting productive meetings, and applying management skills on the job. Phase II reviews the on-the-job implementation of these skills and discusses them in greater detail. This phase highlights difficulties in achieving managerial behavior change, as well as problems in implementing new management systems. A new theme is then introduced: improving team performance by developing unit and mission goals, by defining performance standards, and by planning for application and follow-up. Phase III provides a practical synthesis of the program's concepts and skills in an effort to operationalize the unit and organizational-wide performance standards that were developed in Phase II. Session topics discuss goal establishment, using performance indicators, and clarifying management priorities.

090

PN-ABC-682
MF \$2.16/PC \$20.80

Field trials manual for multipurpose tree species

Briscoe, C. Buford; Adams, Norma, ed.

Winrock International Institute for Agricultural Development

U.S. Agency for International Development. Bureau for Science and Technology. Office of Forestry, Environment and Natural Resources (Sponsor)

U.S. Agency for International Development. Bureau for Science and Technology. Office of Rural and Institutional Development (Sponsor)

U.S. Agency for International Development. Bureau for Asia and Near East. Office of Technical Resources (Sponsor)

1989, 163p. : ill., charts, statistical tables, En

Multipurpose tree species network research series.

Manual, no.3

9365547

A scientific guide to conducting field trials on multipurpose tree species is presented. Following an introduction, Section 2 reviews basic issues in designing a statistically valid trial and includes some examples and possible field layouts. Section 3 treats nursery practices, including germination of seeds, care of seedlings, lifting, and transport. It does not discuss nursery location, establishment, or management. Sections 4 and 5, on field establishment and post-planting care, respectively, describe what should be done, but not how (which depends greatly on local tools and practices). Section 6 considers measurements in detail because they must be standardized to ensure meaningful comparisons between trials, even those conducted by the same scientist. Details provided in Section 7 for recording data are applicable only to the Information and Decision Support System (IADSS) prepared under A.I.D.'s Forestry/Fuelwood Research and Development (F/FRED) project. The specific forms described are contained in preliminary software for IADSS; a final version is pending. Codes are provided in Section 8 to help reduce the tedium of data entry, conserve computer memory, and speed analysis. Appendices include samples of field trial procedures already underway in the F/FRED-sponsored

humid and subhumid network, as well as of those planned for arid and semiarid network trials. The manual stresses the need for standardized methodology to enable scientists to determine site and tree characteristics so that variations represent experimental and not methodological differences. (Author abstract, modified)

091

PN-ABC-685
MF \$2.16/PC \$16.38

Social sciences in Asian forestry curricula : report on the workshop held November 27–December 2, 1988 in Khon Kaen, Thailand

Parker, J. Kathy, ed.; Clausi, Robert E., ed.;

Burch, William R., Jr., ed.

Yale University. School of Forestry and Environmental Studies

U.N. Food and Agriculture Organization. Regional Office for Asia and the Far East

Winrock International Institute for Agricultural Development

U.S. Agency for International Development. Bureau for Science and Technology. Office of Forestry, Environment and Natural Resources (Sponsor)

U.S. Agency for International Development. Bureau for Asia and Near East. Office of Technical Resources (Sponsor)

U.S. Agency for International Development. Bureau for Science and Technology. Office of Rural and Institutional Development (Sponsor)

(Workshop on the Social Sciences in Asian Forestry Curricula, Khon Kaen, TH, 27 Nov–2 Dec 1988)

1989, 122p., En

9365547

Throughout the world, the integration of the social sciences and forestry has assumed new importance because of changing values regarding trees and forests, ecology, and local participation. This report summarizes a workshop, held in Thailand and attended by participants from Bangladesh, India, Indonesia, Malaysia, Philippines, Sri Lanka, Thailand, the Netherlands, and the United States, on the relevance of Asia's forestry experience for forestry educa-

tion. Included are seven workshop reports on ways in which the social sciences can help fill information gaps and solve field problems, the integration of the social and biophysical sciences with forestry research and forestry curricula, key organizational issues, and forestry curricula design. Also included are general and specific recommendations for integrating the social sciences into forestry curricula. Recommendations for government and donor support focus on: (1) employing professionals with "people-oriented" training in government bureaucracies; (2) providing incentives for university-agroforestry "partnership for learning" programs; (3) supporting innovative approaches to integrating the social sciences into forestry; and (4) encouraging long-term approaches to institutional development in the areas of agroforestry research and education.

092

PN-ABC-841

MF \$7.56/PC \$71.24

Agroforestry systems in the tropics

Nair, P.K.R., ed.

International Council for Research in Agroforestry
U.S. Agency for International Development, Bureau for
Science and Technology, Office of Agriculture
(Sponsor)

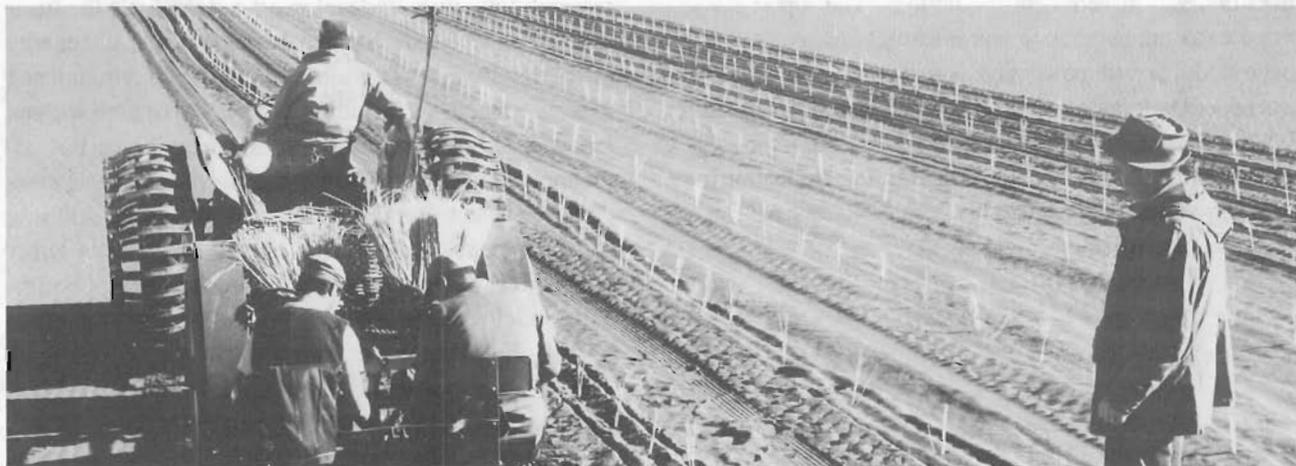
1989, x, 664p. : ill., charts, maps, statistical tables, En
Forestry sciences, v.31

Published by Kluwer Academic Publishers

Includes references and index

Agroforestry—the deliberate growing of woody perennials on the same unit of land with farm crops or animals, with significant interaction between the two systems—is an increasingly crucial component of afforestation and sustainable agriculture activities in many parts of the Third World. This book consolidates the descriptive results of a pantropical project undertaken between 1982 and 1987 to systematically collect and synthesize data on agroforestry projects throughout the developing world. Thirty-seven chapters by various authors focus on: (1) the history, definition, and current state of agroforestry; (2) its productive and protective role; and (3) agroforestry systems and practices in Asia, the Pacific, Latin America, and Africa.

Achievements recorded by the project have been numerous. In India, for example, afforestation is playing a significant role in sand dune stabilization, while contour strips of multipurpose trees make crop production possible on steep slopes in Nepal. Intercropping nitrogen-fixing tree species such as *Leucaena leucocephala* and *Casuarina oligodon* in coffee, coconut, and cacao growing areas of Papua New Guinea helps ensure agricultural productivity and sustainability. Trees in low-input integrated home gardens in highland Tanzania provide families with food, fodder, and fuelwood. The "paraiso woodlot," an increasingly popular small-farmer agroforestry system in Paraguay, is an alternative to traditional cropping in the degraded, acidic, sandy soils of San Pedro State. Three appendices give information on the agroforestry systems database at the International Council for Research in Agroforestry, as well as on major herbaceous and woody perennial species and their use in agroforestry systems.



Trees are planted in Chile to stabilize dunes.

093

PN-ABC-257
MF \$2.16/PC \$22.23

Private sector power generation in Indonesia : opportunities and impediments

Palmedo, Philip F.; Amin-Arsala, Betsy; et al.
Energy/Development International
U.S. Agency for International Development. Bureau for Science and Technology. Office of Energy (Sponsor)
U.S. Agency for International Development. Bureau for Asia and Near East. Indonesia (Sponsor)
Mar 1988, iii, [122]p. + 6 appendices : statistical tables, En

In Indonesia, a 1985 law encourages privatization of the power sector. This report assesses the potential for and implications of private power production in the country and recommends government actions to further encourage private power. Background information is provided on the current state of electric power in Indonesia and experiences with private power in the United States, Turkey, and Pakistan. Three general approaches to private power production are assessed: (1) new, large-scale power plants based on indigenous coal or natural gas; (2) cogeneration in industry; and (3) biomass/renewable energy systems. Technical, financial, and development aspects of each approach are discussed. Indonesia's financial and investment climate for power privatization is described with reference to banks and other financial institutions, private investors, and government regulations. The report then proposes a framework for government actions. According to the study, private power production could be of significant benefit to Indonesia if properly managed and planned. Benefits would include an increase in the overall energy and economic efficiency of the power system; reduction in local currency and foreign exchange burdens; and accelerated rural electrification.

094

PN-ABC-825
MF \$1.08/PC \$6.89

A.I.D. approach : using agricultural and forestry wastes for the production of energy in support of rural development

U.S. Agency for International Development. Bureau for Science and Technology. Office of Energy
Apr 1989, ii, 43p. : ill., charts, statistical tables, En
Bioenergy systems report
9365709

Traditionally, biomass in the form of wood, animal waste, or crop residues is used by rural people to provide cooking and heating fuel. In 1979, A.I.D. began to explore the possibility of tapping biomass resources for energy production in the service of rural development. Building on this experience, the Biomass Energy Systems and Technology project (BEST) seeks to integrate natural resources, private sector expertise, and financial support in order to convert biomass into marketable energy products at existing agro-processing facilities. This report documents BEST's approach to biomass promotion and includes sections on: (1) the rationale for the project's commodity focus (sugar cane, rice, and wood); (2) the relevant U.S. biomass experience with rice, cane, and wood residues, etc.) which BEST draws upon; (3) A.I.D.'s experience in the field application of rice, wood, and cane residue bioenergy systems; (4) economic analyses of biomass systems (using examples from Indonesia and Costa Rica); (5) research initiatives to develop off-season fuels for sugar mills, advanced biomass conversion systems, and energy efficiency in sugar factories; and (6) the environmental aspects of biomass (including its ability to be used without increasing global warming). The report notes that although biomass systems can be a powerful and cost-effective spur to rural development, they have still not, some 15 years after the first energy crisis, been either accepted or commercially disseminated to the degree originally anticipated.

095

PN-ABD-072

MF \$2.16/PC \$17.68

**Energy efficient stoves in East Africa :
an assessment of the Kenya Ceramic
Jiko (stove) program**

Jones, H. Mike; Stevenson, G.G.; et al.

U.S. Dept. of Energy. Oak Ridge National Laboratory

Kenya Energy and Environmental Organization

U.S. Agency for International Development. Bureau for

Africa. Regional Economic Development Services

Office. East and Southern Africa (Sponsor)

U.S. Agency for International Development. Bureau for

Science and Technology. Office of Energy (Sponsor)

31 Jan 1989, vi, 124p. : charts, statistical tables, En

Report no.89-01

6150205; 9365730

More than 70% of Kenya's total energy consumption is supplied by wood resources. This report reviews the background, development, and results of the Kenya Ceramic Jiko (stove) or KCJ Program, which was initiated jointly by A.I.D. and the Government of Kenya (GOK) in the early

1980's to encourage charcoal fuel conservation in urban households. According to the report, the KCJ program can be considered a success for several reasons. The stove yields a 14-40% savings in charcoal expenditure vis-a-vis traditional charcoal, electric, and liquified petroleum gas (LPG) cookers; it is also profitable to manufacture, with commercial sales currently estimated at 125,000-140,000 units per year. In addition, competition has significantly lowered the high initial prices in Nairobi, the major market. The GOK seems satisfied with the program's employment and income-generating benefits, while A.I.D. has met its objectives to help Kenya conserve energy and create a self-sustaining production capability. The use of existing and proven commercial manufacturing and marketing systems was the key to this success. Several problem areas are noted, however, including a substantial decrease in GOK support in recent years, inadequate availability of the stove, its prohibitive price outside Nairobi, and the lack of generally available information for replicating the technology. Besides recommendations for enhancing the effectiveness of the KCJ program, the report includes general guidelines for comprehensive stove programs and recommendations for applying lessons learned in the Kenya project to the Sudan Renewable Energy II Project.

EDUCATION

096

PN-AAX-216

MF \$1.08/PC \$4.55

Indonesia : the Bogor Institute of Agriculture

Theisen, Gary; Armstrong, George; et al.

U.S. Agency for International Development. Bureau for Program and Policy Coordination. Center for Development Information and Evaluation

Mar 1989, x, 23p., En

A.I.D. project impact evaluation report, no.70

Assisted by one of the longest periods of continuous support ever provided by A.I.D., the Bogor Institute of Agriculture (Institute Pertanian Bogor or IPB) has been at the forefront of Indonesia's agricultural and educational development for over 30 years. IBP faculty and staff have helped to develop and disseminate improved corn hybrids, control the brown plant hopper, improve soil fertility, develop farming and land-use techniques to promote transmigration, and promote major initiatives in natural resource management and conservation. In the educational sector, IPB's pioneering efforts in academic planning have had notable repercussions throughout Indonesia, improving the quality of students and curricula and accelerating the rate at which students complete their studies. IPB graduates are in great demand and its faculty are frequently called on by Government agencies to conduct research and provide policy advice, and by other Indonesian universities to serve as lecturers, administrators, and resource personnel.

Yet a number of problems cloud the Institute's future. Pressures to expand enrollment have stretched infrastructure and human resources very thin. IPB is also being pressured by the Government to take the lead in promoting provincial universities at a time when its energies and resources are needed at IPB itself. Opportunities for faculty development are much more limited than in the past, when donors funded overseas study; few of the new staff have had the development opportunities available to their seniors. Cutbacks in Government funding have left IPB with almost no discretionary research funds, not only placing IPB's leadership in basic research in jeopardy, but leaving its very research agenda at the dictates of external agencies.

If IPB is to remain a sectoral leader, it must develop a comprehensive, strategic, long-term vision and plan. Major needs are to identify a smaller number of technical specialties on which IPB can concentrate its resources and to enlist external support to maintain faculty skills, stimulate innovative approaches, respond to changing development needs, and establish long-term linkages with academic and research institutions in the industrialized and developing world.

097

PN-AAX-219

MF \$1.08/PC \$4.81

Ethiopia : Alemaya University of Agriculture

Price, Edwin; Evans, Conrad

U.S. Agency for International Development. Bureau for Program and Policy Coordination. Center for Development Information and Evaluation

Jun 1989, vii, 16p., En

A.I.D. project impact evaluation report, no.71

Alemaya University of Agriculture is the primary institution of agricultural higher education in Ethiopia and the only institution offering B.S. and M.S. degrees in agriculture. From its establishment in 1952 through 1968, the University received major institutional development assistance from A.I.D. This report measures the impact Alemaya has made through its graduates and its research and extension activities. The University has granted 1,629 diplomas, 2,558 B.S. degrees, and 81 M.S. degrees, and graduates are employed at all levels of administration and education in Ethiopian society. Research results produced by Alemaya faculty are eagerly awaited by the Government and by farmers, and many plant varieties developed by the University are in use throughout the agricultural economy. Alemaya-developed techniques in animal breeding and conversion of waste by-products have also been successfully implemented. These accomplishments have been achieved under conditions of considerable hardship. The University is extremely understaffed, largely due to the exodus of faculty members during and after the 1974 revolution. Nevertheless, the University is not highly politicized, but rather presents the image of a technocracy, heavily oriented to achieving agricultural breakthroughs.

Although Alemaya has solid leadership and appears poised for rapid progress, neither donors nor the Ethiopian Government appear inclined to provide the University with necessary support.

098

PN-ABC-722
MF \$1.08/PC \$4.68

Literature review on the soft technologies of learning

Thiagarajon, Sivasailam; Passigna, Aida L.

Harvard University. Harvard Institute for International Development

Harvard University. Harvard Graduate School of Education

U.S. Agency for International Development. Bureau for Science and Technology. Office of Education (Sponsor)

Jul 1988, iv, 31p. : ill., En

BRIDGES research report series, no.2
9365824

Traditional educational methods which focus on curriculum design have not responded effectively to the expanding demand for primary education in developing countries. This document reviews the literature concerning the "soft" technologies of learning (i.e., those utilizing conventional means such as blackboards, print media, and mastery learning), which focus on how students learn rather than what they learn. Several generalizations emerge from this review. (1) Systematic instructional process and design procedures are effective but not widely used in developing countries. (2) The textbook remains the most prevalent type of instructional material in developing countries, though modularized and programmed learning materials and workbooks are gaining in popularity. (3) Programmed teaching, tutoring, and peer group learning methods have all been effective, although individualized instruction is not cost-effective. (4) Effective use of soft technologies may require changes in the teacher's role (i.e., less autonomy in the classroom). (5) Conventional school organizational structures do not facilitate the effective use of soft technologies. New technologies should take into account the conditions prevalent in Third World schools. Policy recommendations include, inter alia, using

instructional design procedures in conjunction with educational reforms, using programmed teaching in primary schools to compensate for the lack of qualified teachers, and employing self-instructional programming materials in higher grades, since they require literacy skills.

099

PN-ABC-724
MF \$1.08/PC \$1.30

Simplified linear programming approach to the estimation of enrolment transition rates : estimating rates with minimal data availability

Crouch, Luis

Research Triangle Institute

U.S. Agency for International Development. Bureau for Science and Technology. Office of Education (Sponsor)

Mar 1989, 9p. : statistical tables, En

Cover title: New approach to the estimation of enrolment transition rates : estimating repeater and dropout rates with minimal data availability

9365824

Knowledge of the rates of repetition, dropping out, and entrance into the first grade is of great importance to educational planners and policy analysts. Unfortunately, the traditional methods of estimating these rates are fraught with serious problems. This paper suggests an alternative method, one which has minimal data requirements and can be quickly computed using a microcomputer. The proposed method requires neither exact equality in the mathematical relations, as in the simultaneous equation option, nor a long time series of data, as in the least-squares option, nor the shaky assumption that transition rates do not change over the longer period. It does not require data on enrollment by age and grade, which are not available in many countries, and assumptions can be made as restrictive or relaxed as one feels comfortable with. Only 3 years of consecutive enrollment data and 2 years of data on population of school entrance age are required. There are two disadvantages, however. The first is methodological: rates that seem unstable from grade to grade may occasionally be produced. The second is that the method is impos-

EDUCATION

sible to apply by hand; it requires access to a microcomputer and linear programming software.

100

PN-ABC-729

MF \$2.16/PC \$16.25

Interactive radio instruction handbook : a guide to planning and implementation

Academy for Educational Development, Inc. Clearinghouse on Development Communications

U.S. Agency for International Development. Bureau for Science and Technology. Office of Education
(Sponsor)

1988, v.p. : charts, En
9311231

Interactive radio instruction combines systematic instructional design and radio technology to ensure quality,

inexpensive education for previously unreachable learners. The methodology outlined in this handbook has proved effective in teaching both language arts and mathematics in diverse cultural settings, including Nicaragua, Kenya, Thailand, and the Dominican Republic. Further adaptations are being developed in Honduras, Papua New Guinea, Lesotho, and Bolivia. In some cases, instruction has been supported by qualified teachers, while in others the method was adapted to make use of facilitators with minimal training. Modules contained in the handbook deal with the practical procedures and techniques necessary to develop and administer an effective interactive radio instruction project. These include feasibility and planning, staffing, production management, curriculum design, scriptwriting for both instructional radio and for interactive radio instruction, studio production, acting, timing, and musical and sound effects. The handbook also provides a checklist to help policymakers determine whether their country could benefit from interactive radio instruction.



An interactive radio class in Kenya.

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