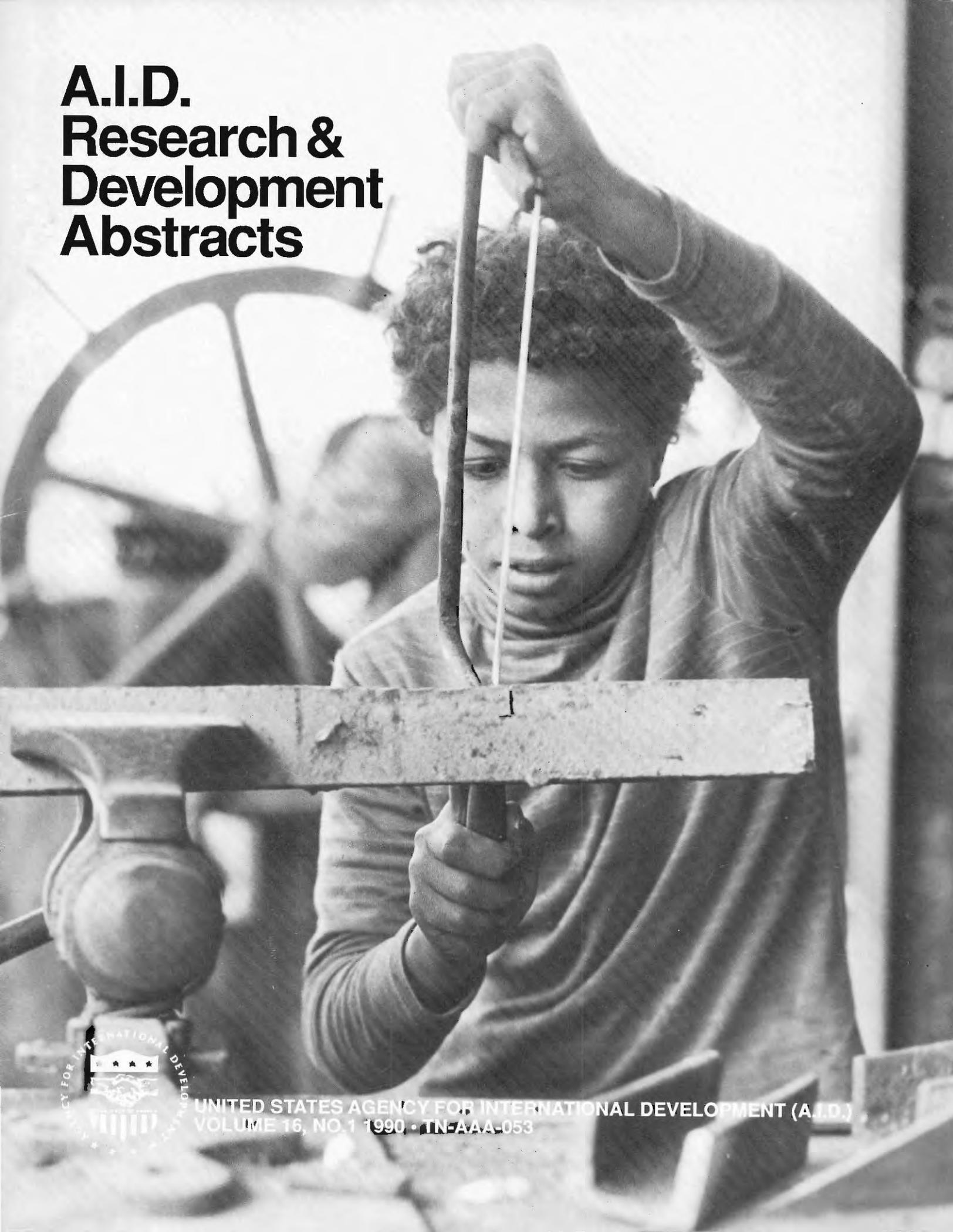


A.I.D. Research & Development Abstracts



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A.I.D. Research and Development Abstracts

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*Cover: A boy cuts a metal bar to size in a thresher factory in Cairo, Egypt.
(Credit: Agency for International Development)*

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QUESTIONS AND ANSWERS ABOUT ARDA

What is ARDA?	<i>ARDA</i> , "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 <i>ARDA</i> is to transfer development and technical information to active practitioners in development assistance.
For whom is ARDA published?	<i>ARDA</i> '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?	<i>ARDA</i> 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 <i>ARDA</i> 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?	<i>ARDA</i> , "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 d'Évaluation du Développement, Bureau de Coordination de Programmes et Politiques.
Quel est l'objectif d'ARDA?	Le but d' <i>ARDA</i> est de transmettre des informations techniques sur le développement à ceux qui prêtent assistance au développement.
A qui s'adresse ARDA?	<i>ARDA</i> 's 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?	<i>ARDA</i> 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 <i>ARDA</i> PPC/CDIE/DI Agency for International Development Washington, D.C. 20523 U.S.A.

PREGUNTAS Y RESPUESTAS SOBRE ARDA

¿Qué es ARDA?	<i>ARDA</i> , "A.I.D. Research and Development Abstracts", (Summaries 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 <i>ARDA</i> es suministrar información técnica y sobre el desarrollo a los participantes activos en las actividades del desarrollo.
¿Para quién se publica ARDA?	<i>ARDA</i> 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?	<i>ARDA</i> 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 <i>ARDA</i> 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 ICLARM contribution no.457 ICLARM conference proceedings, no.16	Serial title (if any), date, pagination, language	
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-225
MF \$1.08/PC \$5.98

Operational issues in developing A.I.D. policy reform programs

Vondal, Patricia

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

Oct 1989, vii, 28p. + 3 appendices, En

A.I.D. program evaluation discussion paper, no.28

Program assistance for the support of macroeconomic and sectoral policy reform has become a major element in A.I.D.'s strategy for fostering broad-based and sustainable economic growth in developing countries. This paper identifies and discusses some of the major operational issues involved in the process of planning, designing, and negotiating policy reform programs. It is primarily based on lessons learned from A.I.D. experience in developing sector-specific and macroeconomic policy reform programs in Central America, Asia, the Near East, and Africa since 1983. The topics covered include: approaches to selecting policy objectives; analytical requirements for designing programs; donor coordination; design of conditionality; use of A.I.D. resources in packaging reforms; sources of A.I.D. influence; and negotiation strategies and styles. The study also suggests approaches to developing and promoting reform programs based on past successful experiences. The primary conclusion is that the manner in which A.I.D. develops and negotiates policy reform programs has major implications for the degree of support, the implementation, and the sustainability of the reform program, as well as for the tenor of bilateral relations between the U.S. and host country government. Therefore, A.I.D. efforts which emphasize collaboration, consensus-building, flexibility, cultural sensitivity, and recognition of local political and economic realities hold the most promise. (Author abstract, modified)

002

PN-ABC-899
MF \$1.08/PC \$2.34

Impact indicators: general issues and concerns

Kumar, Krishna

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

(Impact Indicators Workshop, Arlington, VA, US, 20–22 Jun 1988)

Aug 1989, (14)p., En

A.I.D. evaluation occasional paper, no.30

Related document: PN-ABB-190

Impact indicators — which may be defined as measures of the effect of development interventions on people, economic sectors, society, and the environment — are a largely unexplored and even ambiguous topic within A.I.D. This paper examines some basic issues affecting impact indicators for agricultural and rural development projects. The paper lists technical and practical criteria for selecting impact indicators and argues the indispensability of these indicators in determining whether and to what extent development changes have occurred, although the use of supplementary qualitative studies is urged to develop a reasonable certainty that the changes are causally link to a given project. Three impact areas — household income, food availability and consumption, and the natural resource base — are identified as central for providing a systematic assessment of the Agency's progress towards its agricultural and rural development goals; simple criteria for selecting sample projects on which to gather data in these three areas are presented. A final section suggests concrete ways of reducing the costs of establishing a system for collecting and analyzing impact data.

GENERAL DEVELOPMENT

003

PN-ABD-131
MF \$1.08/PC \$4.81

Policy-based assistance: a historical perspective

Weintraub, Sidney

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

09 Jun 1989, 37p., En

9305311

The evolution of U.S. foreign assistance techniques is traced, with emphasis on the current popularity of policy-based assistance. The report criticizes A.I.D.'s attempts to play a major role in the structural adjustment process promoted by the World Bank and the International Monetary Fund. A.I.D.'s Economic Support Fund, designed to

A.I.D.'s Economic Support Fund is constrained by congressional earmarking and the concentration of these funds in countries of geopolitical or military importance to the United States. Under these circumstances, A.I.D. has no credibility in seeking to establish macroeconomic policy conditions.

provide the necessary flexibility for setting macroeconomic policy targets, is constrained by congressional earmarking and the concentration of these funds in countries of geopolitical or military importance to the United States. Under these circumstances, A.I.D. has no credibility in seeking to establish macroeconomic policy conditions. The overall conclusion of the paper is that A.I.D. should focus its policy-based lending on certain sectors and programs rather than attempt to replicate the international financial institutions' stabilization-adjustment programs. Specifically, the report recommends that A.I.D. (1) concentrate its programs on general U.S. interests, such as promoting pluralism, encouraging open economies, and implementing environmental, health, and educational initiatives, and (2) build on A.I.D.'s own areas of expertise—

its presence in the field, its knowledge of the social milieu in which it operates, its sectoral skills, and its ability to carry out a continual dialogue with national authorities. In this way, the Agency can complement the stabilization-adjustment programs by reducing their adverse impact on the poor.

004

*PN-ABD-173
MF \$3.24/PC \$34.06

Local organizations for social development: concepts and cases of irrigation organization

Freeman, David M.; Bhandarkar, Vrinda; et al.

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

1989, xii, 258p.: ill., charts, maps, statistical tables, En
Westview special studies in social, political, and economic development

Selected bibliography: p.241-250

Includes index

9364127

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

In the case of large-scale gravity-flow irrigation systems, it is the state which bears the cost of capturing the water supply in remote watersheds and constructing the engineering works to store and deliver water. However, the returns from this enormous investment are ultimately determined by the local organizations responsible for delivering water to individual irrigators. The role of these middle-level groups in mediating between local people and state bureaucracies is vital, albeit frequently overlooked in development project planning. Part I of this report analyzes the organizational breakdown between main system bureaucracies and farmers and formulates strategies for improved design of local irrigation organizations. Chapter I provides historical and global background information, while Chapter II identifies major challenges facing local irrigation organizations, including the need to reconcile public supply with farmer demand and to integrate the knowledge of main system managers with that of local farmers. Chapter III presents essential design choices to be made in organizing at the middle-level and Chapter

IV contains guidelines for establishing farmer groups. Part II of the report explores specific cases: (1) irrigation organization in the Punjab, Pakistan; (2) a small reservoir system in Madhya Pradesh, India; and (3) two reservoir systems in Sri Lanka. Implications and conclusions are contained in Part III.

005

***PN-ABD-335**
MF \$4.32/PC \$46.54

Cooperation for international development: the United States and the Third World in the 1990's

Berg, Robert J., ed.; Gordon, David F., ed.
Michigan State University. Center for Advanced Study of International Development
U.S. Agency for International Development (Sponsor)
1989, xii, 356p.: charts, statistical tables, En
Published by Lynne Rienner Publishers, Inc.
**Also available from: Lynne Rienner Publishers, Inc., 1800 30th Street, Boulder, CO 80301 USA*

The United States stands at a crossroads in its relations with the Third World, and unless policies are fundamentally changed, it will be unable to respond to the disparate challenges of the 1990's. Thus says this report, which assesses the future of U.S. economic cooperation with the Third World. Part 1 (five essays) discusses the international context in which development activities will occur in the 1990's. U.S. interests in the Third World and the capacities of U.S. institutions, public and private, for involvement in international development are examined in Part 2 (four essays). Part 3 explores the issues involved in organizing and implementing U.S. development cooperation activities (four essays). Throughout the report, attention is focused on development policies, the rationales behind development cooperation, and the modes and mechanisms through which such cooperation can best be achieved. Overall, the report takes a broad, centrist perspective which incorporates a range of viewpoints, and recognizes that the official public sector must continue for the time being to play a leadership role in development cooperation. Perhaps the major conclusion is that this is an

opportune time for the United States to pursue the best possible mixture of both national interests and humanitarian goals.

006

PN-ABD-340
MF \$1.08/PC \$8.84

USAID-financed PVO co-financing projects in the Philippines and Indonesia: reshaping the terms of PVO collaboration

Cotter, Jim
U.S. Agency for International Development. Bureau for Asia and Near East (Sponsor)
Dec 1988, v, 46p. + attachment, En

Since the mid-1970's, A.I.D. has supported several co-financing projects with U.S. and indigenous PVO's (IPVO's) in the Philippines and Indonesia. These projects have shown that IPVO's are no longer passive recipients of assistance but true collaborators of A.I.D. and U.S. PVO's. In fact, established IPVO's now provide the only affordable means of reaching smaller, newly formed, local organizations in isolated and widely dispersed areas. In addition, by helping their clients participate in their own development the IPVO's have written a success story in "democratization" that should be heard and understood by the U.S. Congress and the American people. A key policy implication is that A.I.D. should accord the IPVO's greater responsibility, especially in regard to financial management. At the same time, A.I.D. should only attempt to replicate the Indonesia and Philippine co-financing program after thoroughly analyzing the new setting. The co-financing projects have also shown that, as development practitioners, IPVO's are as good as and often better than the U.S. PVO's now serving them, and know more about the local culture and government sensitivities than do the U.S. PVO's. And the annual cost of an expatriate TA consultant—\$100,000—could pay the salaries of several local development workers. While not unappreciative of past assistance, IPVO's now desire to specify the help they need from their U.S. counterparts and to share with them the knowledge they have themselves acquired of the development field.

GENERAL DEVELOPMENT

007

PN-ABD-386
MF \$1.08/PC \$3.25

Examination of approaches to policy-based nonproject assistance

Bowles, W. Donald

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

Mar 1989, 19p., En

[CDIE] working paper, no.126

The economic collapse of many developing countries, particularly in sub-Saharan Africa, has resulted in a growing emphasis on policy reform. This paper provides an overview of policy-based, nonproject assistance, focusing on structural adjustment lending by A.I.D., the IMF, and the World Bank. Following a discussion of the value, yet limited applicability, of the market model as the theoretical basis for conditionality, the paper reviews the implementation in several countries of A.I.D.'s approach to conditionality, which embodies a pragmatic approach to reforming the economic policies and institutions that impede market-led development. Succeeding sections: evaluate the operational effectiveness and consistency of policy-based nonproject assistance; identify major advantages and disadvantages of conditionality; and assess the impact of both monetary and fiscal policy reforms on beneficiaries, especially the poor. A final summary section stresses the importance of policy reform, the possibility of undertaking it while providing protection to the poor, the importance of a strong private sector and a "pro-active" government, and the need to avoid unrealistic expectations: policies that developed over centuries cannot be changed overnight. The report concludes by noting that because policy reform changes the balance of power among economic groups, perhaps the main problem encountered in encouraging policy reform is to convince the leadership that they will be able to survive, and even prosper, while at the same time giving up power and authority.

008

PN-ABD-802
MF \$2.16/PC \$14.04

Cooperative development and the U.S. Agency for International Development: an evaluation

Magill, John H.; Blayney, Robert C.; et al.

Automation Research Systems, Ltd.

U.S. Agency for International Development. Bureau for Food for Peace and Voluntary Assistance. Office of Private and Voluntary Cooperation (Sponsor)

Jan 1989, xiii, 92p., En

9380250

The impact of grants provided by A.I.D. to four cooperative development organizations (CDO's) is assessed in this report. The organizations include Agricultural Cooperative Development International, the Cooperative Housing Foundation, the National Rural Electric Cooperatives Association, and the World Council of Credit Unions. The grants have provided financial and program stability for the CDO's. They have enabled them to hire and retain qualified staff and technicians, coordinate and provide advanced training support, maintain contact with cooperative movements in developing countries, and maintain a presence with host country officials, USAID personnel, and other donor agencies. Without A.I.D. assistance, at least two of the CDO's would not be involved in international cooperative development. On the negative side, A.I.D. assistance to the CDO's has not been translated effectively into increased support for cooperative development at the Mission and Regional Bureau levels; overall, A.I.D. support for cooperative development appears to be declining in both absolute and relative terms. Moreover, although A.I.D. support for the CDO's has succeeded in developing a specialized expertise in providing cooperative development services, the CDO's are facing increasing problems in marketing that expertise, due in part to the decline in cooperative-specific projects within A.I.D. and in part to an increase in competition from consulting firms. Includes recommendations for both A.I.D. and CDO's and chapters on each of the four CDO's.

009

PN-ABD-830
MF \$1.08/PC \$12.35

Forty years in the Altiplano — a cross-cutting evaluation of A.I.D.-financed assistance in Guatemala's Altiplano (from the 1940's to the present): volume I: executive summary, summary report, photo section

Smith, Gary H.; Lazar, David; et al.

Development Associates, Inc.

Agroindustrial Consultants

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

Mar 1989, [81]p.: ill., En

V.II: PN-ABD-831, v.III: PN-ABD-832

Beginning sporadically in the late 1940's, U.S. development assistance to Guatemala's highland Indian areas — the Altiplano — became a major element of A.I.D.'s country development strategy in the late 1960's. This assistance is evaluated herein with respect to the following core development areas: agriculture, including efforts in crop diversification, soil conservation, small-scale irrigation, rural credit and cooperatives, and marketing; basic preventive health care, potable water and sanitation, and family planning; primary education, bilingual and nonformal education, school construction, and teacher training; and complementary activities to strengthen municipal and community leadership, decisionmaking, and information systems. According to the report, A.I.D.'s core programs have been appropriate and sustained over time and have clearly had a positive, cumulative effect, especially during the last 15 years, in improving earnings, employment, life expectancy, and education on the Altiplano. Key cross-cutting factors in this process have included institutional strengthening, training of all kinds (with a growing emphasis on the community), and policy dialogue with the Guatemalan government. However, powerful factors may

retard the impact of present and future assistance efforts: rapid population growth, environmental degradation, institutional and bureaucratic problems, and political violence. Volume II of the report contains individual contractor reports and detailed recommendations, while Volume III contains appendices, including lists of past projects and documentation.



Widespread child malnutrition in the Guatemalan Altiplano has become a major concern of A.I.D.'s development strategy.

WOMEN IN DEVELOPMENT

010

PN-ABC-454
MF \$2.16/PC \$16.77

Making the case for the gender variable: women and the wealth and well-being of nations

Blumberg, Rae Lesser; Clark, Mari H., ed.
U.S. Agency for International Development. Bureau for Program and Policy Coordination. Office of Women in Development
Oct 1989, xx, 115p.: charts, statistical tables, En
Technical reports in gender and development, no.1

Although virtually all international development agencies have policies to integrate women into economic development, the perception persists that resources targeted to women will have little impact beyond the women themselves. This monograph presents evidence from empirical, quantitative, and computer modeling studies showing that such assistance actually has a multiplier effect that spreads benefits through the woman and her family to whole nations and even regions. Evidence is marshalled to stress the importance of supporting: (1) women's economically productive activities, which contribute significantly to the food supply, the large informal sector, the service and farm labor forces, and the export manufacturing labor force; and (2) women's education, which affects health, fertility, formal labor force participation, and economic growth. The report also presents evidence that the development impact of women's economic activities, as well as women's overall status and decisionmaking power within the household, is intensified when women control the use of income (usually spending it for child nutrition and the family's basic needs); included is a critique of the standard gender-disaggregated model of the household economy. The report points out the grave implications of these findings for the food crisis in Africa, where women, the producers of up to 80% of local food crops, are almost always bypassed by extension, input, and credit programs.

011

PN-ABC-720
MF \$4.32/PC \$49.01

Impacts of economic and agricultural policies on women in agriculture: four case studies

Warnken, Phillip F.; Reintsma, Mary; et al.
Robert R. Nathan Associates, Inc.
Abt Associates, Inc.
Abel, Daft & Earley, Inc.
Oklahoma State University. Dept. of Agricultural Economics
U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture (Sponsor)
U.S. Agency for International Development. Office of Women in Development (Sponsor)
Feb 1989, ca. 350p.: charts, statistical tables, En
APAP technical document, no.506
9364084

Very few macroeconomic policies take into account the significant differences between men's and women's resources, roles, and responsibilities in the agricultural sector. To illustrate the importance of these differences, this report uses a rapid appraisal technique called "policy inventory" to develop case studies of the impact of agricultural and economic policy interventions (direct actions rather than general policy statements) on rural women in Guatemala, Malawi, Thailand, and the Yemen Arab Republic. Each study provides a country description, including recent economic trends, and identifies agricultural inputs, outputs, and institutions. Major findings include the following. (1) Differential policy impacts are most evident in situations where women derive separate income from their own plots and enterprises, as in many African countries. (2) The policies with the greatest impact on women in the agricultural sector are generally not those affecting agriculture, but instead those that affect small enterprise, particularly marketing activities. (3) In general, women have benefited from the expansion of private sector agricultural services such as credit and marketing. (4) Women have generally not been helped by government land titling programs. In conclusion, the report stresses the need for policymakers to gain a better understanding of the

role of rural women, their contribution to rural income and production, and the effect of government actions on their well-being.

012 **PN-ABD-317**
MF \$1.08/PC \$2.86

Report to Congress — planning for the next decade: a perspective of women in development

U.S. Agency for International Development. Bureau for Program and Policy Coordination. Office of Women in Development
1 Mar 1989, ii, 20p., En

In July, 1988, the A.I.D. Administrator sent all Bureaus and Missions a memo detailing priority action items regarding the Agency's women in development (WID) program. Oversight of the new initiative was entrusted to the WID Office, which has prepared this report on the subject for the U.S. Congress. The report presents the WID Office's Strategic Workplan for FY 89 in terms both of areas of focus (labor/employment/production, economic policy reform and adjustment, and human capital development and social services) and activity (research and analysis, technical assistance, training, and information management). The report next identifies mechanisms developed by the WID Office to monitor Bureau and Mission progress in institutionalizing gender issues. These mechanisms include a project/activity tracking system, a set of indicators of compliance with the WID mandate, a Gender Information Network (an analytical tool for incorporating WID concerns into program and project planning), and an information packet instructing Bureaus and Missions how to address the Administrator's WID Action Memo. WID Action Plans developed by the regional and central Bureaus are summarized. A comprehensive WID strategy, it is concluded, is now in place within all A.I.D. systems and procedures.

013 **PN-ABD-336**
MF \$1.08/PC \$8.58

Women in the economy of Somalia

McFerson, Hazel M.
U.S. Agency for International Development. Bureau for Program and Policy Coordination. Office of Women in Development (Sponsor)
Sep 1989, vi, 57p., En

Women in Somalia are freer and have greater opportunities to get into business than most other African women. This report analyzes the changing role of women in the Somalian economy, with special emphasis on the economic liberalization period of 1984–1987. Part I assesses societal influences on Somali women, including male migration, marriage, polygamy, and female circumcision. Part II examines women in the agricultural sector, analyzing land tenure, production, and special problems faced by female farmers and female-headed households. Part III discusses women in primary, secondary, vocational, higher, and nonformal education and identifies sociocultural and economic barriers to their full participation. Part IV summarizes a first-ever comprehensive survey of the role of Somali women entrepreneurs and also examines the role of women in government. The report includes several key findings. (1) Female-headed households, caused by increasing male migration, should be studied in order to develop strategies which lessen the pressures placed on them. (2) Due to its harmful personal and socioeconomic effects on women, female circumcision should receive greater attention by donor agencies. (3) Land tenure systems should be studied and codified to allow women, who account for 86% of subsistence farmers, increased opportunity to own land. (4) While women are active in business, they are still "invisible" to policymakers and donor agencies. These groups should recognize the economic contributions made by Somali women in both the rural and urban sectors and should incorporate women's concerns (e.g., child daycare) into their policies.

014

*PN-ABD-021

MF \$2.16/PC \$22.75

Donors and decentralization in developing countries: insights from A.I.D. experience in Peru

Schmidt, Gregory D.

U.S. Agency for International Development (Sponsor)

1989, xvi, 167p., En

Westview special studies in social, political and economic development

Published by Westview Press

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Includes index

5270178

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

During the past decade, almost all major political forces in Peru have advocated some form of governmental decentralization. This goal was supported by A.I.D. from 1979-1987 through two major projects: Integrated Regional Development (IRD), which aimed to improve regional planning and investment in the Sierra, and Disaster Relief, Rehabilitation, and Reconstruction (DRR), which supported recovery from floods and drought. Both projects used decentralized organizations, especially Departmental Development Corporations (CORDES), as planning and implementing agencies. A.I.D. also supported decentralization activities with Program Development and Support Funds. This study reviews these efforts and their historical context, assesses their contribution to decentralization in Peru, and compares them with experiences in other developing countries. According to the report, the A.I.D. projects present a strong case for decentralization in Peru. Most DRR works were completed within three years, while similar donor-assisted projects undertaken by central agencies have suffered long delays due to the glacial pace of disbursements, excessive red tape, and overcentralization of authority. IRD created viable regional planning capabilities using local personnel, simple analytic techniques, and data on local conditions; stimulated substantial contributions of local resources for construction; and facilitated relatively successful community-based maintenance.

On the basis of these experiences, the report provides recommendations for improved donor involvement in decentralization efforts.

015

*PN-ABD-211

MF \$2.16/PC \$23.92

Entrepreneurs and markets in early industrialization: a case study from Pakistan

Nabi, Ijaz

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, vi, 176p.: statistical tables, En

Executive summary : PN-ABD-210

9300092

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

Focusing on Pakistan's farm machinery industry, this book describes the microeconomic environment in which industrialization takes place and analyzes its influence on decisions made by individual firms. The book also identifies policies that deliberately or unintentionally aggravate market imperfections and suggests alternative policies for more smoothly functioning markets and balanced industrial development. Until recently, Pakistan favored an industrial policy based on import substitution, with large-scale industries protected by import restrictions and government subsidies. The policy was largely unsuccessful, since it often allocated scarce capital to inefficient industries and failed to provide broad-based employment. However, despite the policy's bias against small enterprise, entrepreneurs in the farm machinery industry have made remarkable accomplishments. A central theme of the book is the ability of these entrepreneurs to move capital and labor to increasingly valuable uses, which is the basic task of development. It is recommended that government policy not assist entrepreneurs directly, but facilitate

tate their work by providing a stable macroeconomic environment and by ensuring that special interests do not monopolize scarce resources.

016

***PN-ABD-214**

MF \$5.40/PC \$63.70

Rethinking institutional analysis and development: issues, alternatives, and choices

Ostrom, Vincent, ed.; Feeny, David, ed.;

Picht, Hartmut, ed.

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)

(Conference on "Getting the Prices Right" / Workshop in Political Theory and Policy Analysis, Bloomington, IN, US, 17-20 Sep 1985)

Sep 1988, xi, 486p., En

Executive summary: PN-ABD-963

9300092

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

This book explores the impact of institutional and political arrangements on economic development, illustrating how some arrangements exacerbate market distortions and inefficiencies while others facilitate structural change and development. Part II (five essays) focuses on the relationship between economic development and the degree to which institutions and political systems encourage economic, social, and political freedom. Part III (four essays) uses case studies from Botswana, Liberia, and nineteenth-century Haiti to explore institutional changes that foster economic development at the local level, while Part IV (four essays) examines the institutional requisites of a market economy. In the final section (one essay), major arguments emerging from the book are summarized. Principal findings are that: (1) institution building initiatives need to focus on reducing rent-seeking behavior in addition to strengthening training and management systems, (2) institutional experimentation and innovation is con-

strained throughout the developing world due to opposition from national elites and the lack of a favorable legal environment, (3) rapid public sector growth in developing countries has increased the capability of the political and military elite to affect economic choices, and (4) markets have not been able to keep pace with the momentous changes in Asian economic structures during the past 20 years.

017

PN-ABD-257

MF \$2.16/PC \$24.70

Bangladesh: macroeconomic assessment

Hnyilicza, Esteban; Hossain, Mahbub; et al.

International Science and Technology Institute, Inc.

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

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

Aug 1989, iii, 109p. + 5 appendices: charts, statistical tables, En

9300095

Although Bangladesh has achieved modest economic improvements during the past decade, further economic expansion is severely limited by a variety of economic, social, and political factors. This report presents a macroeconomic assessment of the country. Successive sections: (1) review macroeconomic trends in the areas of domestic product and prices, savings and investment, employment, the fiscal sector, and balance of payments; (2) trace the evolution of the country's policy environment in regard to food and agriculture, industry and trade, stabilization, and structural adjustment; (3) analyze Bangladesh's economic performance in terms of private investment, capital productivity, capacity utilization, labor productivity, and income distribution and poverty; and (4) identify major constraints and issues involved in implementing effective economic policy. Analysis of two possible scenarios for economic growth through the year 2000 results in several major projections. Current trends in investment financing, foreign trade, and GDP growth (3.8%) will lead to increas-

ECONOMICS

ing deficits in the balance of payments by FY96. Even with a target GDP growth rate of 5.2%, balance of payments deficits will occur as of FY92. Furthermore, in the case of 5.2% growth, the level of gross international reserves will reach negative levels by FY97 and would attain clearly unfeasible negative values before 2000. The final section of the report presents recommendations for A.I.D. assistance to Bangladesh, with a major focus on investment in education, training, and skills development.

018 **PN-ABD-376**
MF \$2.16/PC \$20.93

Promoting economic development and employment generation through decentralization in Senegal

Minis, Henry P., Jr.; Rondinelli, Dennis A.; et al.
Research Triangle Institute
U.S. Agency for International Development. Bureau for Africa. Senegal (Sponsor)
1989, 122p. + annexes: maps, statistical tables, En

Although the Government of Senegal (GOS) has a highly centralized administrative system, a number of laws have been enacted since the early 1970's to decentralize administrative and fiscal responsibilities to local governments and to regionalize some operations of central government ministries. According to this report, decentralization is crucial to creating a conducive environment for private investment and employment expansion. Section I reviews Senegal's current economic challenges and the relationships between decentralization and economic development. Section II reviews the country's decentralization program and describes the legal framework and financial and service performance of local government units. Section III describes the GOS policy for stimulating the private sector through the national investment code, financial institutions, and technical assistance programs. In Section IV, the report describes other national policy factors which influence the GOS's ability to implement decentralization, including national land policy, local development planning, and training capacities. A review in Section V of policy options for improving decentraliza-

tion leads to a final section which selects from this list the actions deemed most appropriate for near-term action in the light of current A.I.D. program directions, cost, and potential impact on local economic development and employment generation. Five case studies of decentralization in secondary cities and towns are included among the appendices.

019 **PN-ABD-377**
MF \$2.16/PC \$14.17

Manual for off-site analysis of financial institutions in developing countries

Porter, Robert
International Science and Technology Institute, Inc.
U.S. Agency for International Development. Bureau for Private Enterprise. Office of Project Development (Sponsor)
Sep 1989, ii, 66p. + 3 annexes: statistical tables, En 9402002

In reviewing some years ago its traditional on-site approach to bank supervision, the U.S. Treasury Department's Office of the Comptroller of the Currency (OCC) found the approach flawed by a lack of attention to the banks between examinations and by the lack of a comparative national data base. To remedy this, OCC established an off-site monitoring system which analyzes the information provided by banks in periodic "call reports." This manual uses the OCC system as a framework for analyzing financial institutions in the Third World. Chapters I and II describe the evolution of off-site analysis and discuss the significant level of financial disclosure which is required in the call reports. Chapters III-VI explain how a determination can be made regarding the four objective criteria of bank analysis: asset quality, capital adequacy, profitability, and liquidity. Qualitative factors (e.g., management) which should be factored in the overall analysis are assessed in Chapter VII. Finally, Chapter VIII discusses criteria to be used for a three-scale rating (low, medium, and high risk) to summarize the analysis. A sample report, a financial information questionnaire for use by PRE's Loan Portfolio Guarantee Program, and PRE guidelines for assessing Third World institutions are annexed. It is noted that the

assessment is not simply a numerical exercise, as individual judgment will always play an important role in off-site analysis.

020

PN-ABD-389

MF \$2.16/PC \$17.42

Somalia: a study of the profitability of Somali exports

Woodward, David J.; Stockton, G.
Deloitte, Haskins and Sells
Abt Associates, Inc.
University of Idaho. Postharvest Institute for Perishables
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Agriculture
(Sponsor)
Aug 1989, iv, 74p. + 21 annexes: statistical tables, En
9365447

In an effort to provide policy-related data on the effect of differing exchange rates on Somali exports, the present study assesses the profitability of Somalia's major exports — livestock (sheep/goats, cattle, and camels), hides and skins, and bananas. Section 2 presents an overview of Somalia's export sector and the major commodities involved. Particular emphasis is given to the effect of recent subsectoral developments on export performance. Section 3 provides a detailed discussion of cost composition to point of export for each commodity/commodity group. Included are tables which summarize cost for each stage of the marketing chain. Section 4 reviews specific export markets (Saudi Arabia, North Yemen, Egypt, and Italy) to establish actual prices realized for commodities (instead of minimum export prices) and assess issues surrounding Somalia's entry into each market. Finally, the results of the profitability analysis are detailed in Section 5. The implications of the analysis for exchange rate policy are discussed, as are the linkages between exchange rate adjustment and export performance. Recommendations for ensuring the continuation of data collection and analysis are included. A major conclusion is that increased export profitability helps only the seller in the willing buyer/willing seller trade equation. Moreover, a number of non-price issues constrain the effective entry of Somali commodities into foreign markets. Exchange rate adjustment

is thus a necessary but not sufficient condition for enhancing export performance.

021

PN-ABD-639

MF \$1.08/PC \$6.37

How price stabilization would work in Belize

Neils, Kenneth
Kansas State University. Food and Feed Grains Institute
U.S. Agency for International Development. Bureau for
Latin America and the Caribbean. Belize (Sponsor)
Oct 1989, ix, 48p.: charts, statistical tables, En
Public sector / Toledo agricultural marketing project
report, no.2
5050016

Price stabilization is an integrated marketing approach that allows commodity producer prices to vary freely within a target band composed of floor and ceiling prices established to protect producers and consumers respectively. This concept paper examines the feasibility of price stabilization in Belize for three staples — rice, red kidney beans, and corn. An application of price stabilization techniques under various scenarios is made for each of the three commodities using a realistic target band with floor and ceiling prices based on projected supply/demand relationships and historical and border (international) prices, respectively. Benefits to producers and consumers and costs to the Belize Marketing Board (BMB), the price stabilizing agency, are calculated, along with overall benefit/cost ratios that indicate how economically feasible the price stabilization programs would be. Results show that benefits would exceed costs for rice under both scenarios discussed in the paper, and would also exceed costs for red kidney beans given the scenario of an oversupply of the beans and the BMB's need to maintain producer prices near the floor price. Under the scenario of a sharp drop in red kidney bean production, however, the benefits to producers and consumers would not be greater than the costs to the BMB. Benefits would also outweigh costs for corn under the two price stabilization scenarios described in the paper, but the program could be very costly if the

BMB ends up with unmarketable stocks of corn, which lacks an export market from Belize. (Author abstract, modified)

022

PN-ABD-846

MF \$1.08/PC \$7.02

Niger: monitoring the effect of policy reform

Peterson, E. Wesley F.

Abt Associates, Inc.

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

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

Nov 1989, iii, 46p., En

Technical report / agricultural policy analysis project, phase II, no.105

French ed.: PN-ABD-847

9364084

Whereas fairly precise cost-benefit estimates can be made for development projects, the effects of policy reform programs are more difficult to predict and therefore require ongoing monitoring. This report provides a conceptual approach to designing systems for such monitoring and applies them to two policy reform efforts in Niger: the Agricultural Sector Development Grant and the Niger Economic Policy Reform Program. The first part of the report discusses a number of issues pertinent to the design of policy reform programs, with emphasis on the importance of establishing a link between specific policy actions and specific measurable outcomes. Three problem areas related to this issue are identified: the reliability of the economic logic and assumptions linking a reform to certain outcomes; the existence of counterfactual and extenuating circumstances; and the length of time between a cause and its effects. Additional concerns include the choice of variables to monitor and practical considerations related to the design, operation, and maintenance of the monitoring system. The second section of the report outlines a possible monitoring approach and applies it to the two Niger programs. The approach links three performance dimensions — rural living standards, income distri-

bution, and sustainability — to the structural conditions of Niger's economy. Recommendations on the design of a system to monitor agricultural policy reforms are presented in conclusion.

023

PN-ABD-848

MF \$1.08/PC \$4.03

Labor market structure and economic growth

They, Alain

International Science and Technology Institute, Inc.

U.S. Agency for International Development. Bureau for Africa. Regional Economic Development Services Office. East and Southern Africa (Sponsor)

12 Dec 1989, i, 19p. + 3 annexes, En

Delivery order 45

PDC-0000-I-45-6134-00

Despite significant economic reforms and restructuring, many developing country economies have failed to expand fast enough to absorb a burgeoning labor supply. As a result, growing urban unemployment threatens the political and economic stability of these countries and their future prospects for rapid development. This report reviews the current state of knowledge about urban labor markets in developing countries, including some of the theoretical explanations for so-called distortions within these markets. It then assesses the relationship between labor and economic growth and specifies the needs for further theoretical or country-specific research. The report disputes the widely held belief that poorly functioning labor markets result solely from state and labor union interventions that prevent wages from adjusting to market conditions. Instead, the problem is attributed primarily to the lack of sufficient linkages between the modern and the informal sectors. The expansion of these ties would tend to reduce market segmentation, further integrate the informal sector in the national economy, and eventually provide new market opportunities to small-scale firms. By fostering the entry and growth of new firms, expansion is also likely to decrease oligopoly power.

024

PN-AAX-222
MF \$1.08/PC \$4.03

Microenterprise stock-taking: a statistical look at A.I.D.'s microenterprise portfolio

Lieberson, Joseph M.; Doyle, William
U.S. Agency for International Development. Bureau for
Program and Policy Coordination. Center for Develop-
ment Information and Evaluation
Sep 1989, 10p. + 3 appendices: statistical tables, En
A.I.D. evaluation special study, no.63

A.I.D. is currently implementing 87 microenterprise development projects or programs, which will spend \$290 million over their total project life. This study, part of a larger stock-taking of A.I.D.'s microenterprise assistance, provides a statistical overview of the program, including information on its magnitude, composition, and organization; the various types of projects being operated; the types of agencies implementing the projects; and the types of services being provided to microentrepreneurs. The report concentrates on financial levels as a means to help explain and classify the projects and the different approaches used in different regions. Most field projects deal with broad problems (e.g., finance, private sector development, and private voluntary organizations), with only 12% focusing exclusively on microenterprises. While nearly every project includes an institutional development component, only 15 (representing 34% of funding) focus solely on this goal; the others concentrate on providing direct benefits and services to entrepreneurs. Private voluntary organizations implement two-thirds of the projects, representing 52% of funding, while financial institutions implement 16%, covering 37% of funding, and host country governments directly implement projects representing only 4% of funding. The typical A.I.D. project uses a "full service" approach of credit, technical assistance, and training; 55 projects, representing 57% of program funding, employ this approach. Fifteen credit-only projects represent 37% of funding, while 17 projects representing 6% of funding provide only technical assistance and training.

025

PN-ABC-701
MF \$1.08/PC \$4.03

A.I.D. microenterprise stock-taking: Malawi

Webster, Russell; Mooney, Timothy
Development Alternatives, Inc.
Robert R. Nathan Associates, Inc.
U.S. Agency for International Development. Bureau for
Program and Policy Coordination. Center for Develop-
ment Information and Evaluation (Sponsor)
Jul 1989, xv, 13p. + attachment, En
A.I.D. evaluation occasional paper, no.20
Cover title: A.I.D. microenterprise stock-taking : Malawi
field assessment
6120214; 9311096

Since 1980, A.I.D. has supported microenterprise development in Malawi by providing technical assistance, credit, and training through two Malawian intermediary institutions. This report, part of major A.I.D. stock-taking of its experience with microenterprises, describes the composition and growth potential of Malawi's small enterprise sector, followed by an evaluation of the institutions — the Development of Malawi Traders Trust (DEMATT) and the Malawi Union of Savings and Credit Cooperatives (MUSCCO). DEMATT provides technical assistance and training to traders, producers, and service businesses; in 1986/1987, DEMATT reached 545 enterprises with a total of 1,254 employees. MUSCCO provides savings and credit services in 79 Malawian villages — many of which offer no other credit sources except through informal markets. MUSCCO loans are used to fund household expenses, including school fees and funeral costs, as well as productive investment such as fertilizer and other agricultural inputs. Unfortunately, the impact of DEMATT and MUSCCO services on their clients is impossible to determine due to the failure of both organizations to develop adequate monitoring systems. Moreover, the long-term sustainability of these organizations is endangered by inefficiency and an unwillingness to charge interest rates or service fees high enough to cover a significant portion of their operating costs.

PRIVATE ENTERPRISE

026

PN-ABC-705
MF \$1.08/PC \$5.85

Microenterprise stock-taking: the Dominican Republic

Poyo, Jeffrey; Hoelscher, David; Malhotra, Mohini
Development Alternatives, Inc.
Robert R. Nathan Associates, Inc.
U.S. Agency for International Development. Bureau for
Program and Policy Coordination. Center for Develop-
ment Information and Evaluation (Sponsor)
Jul 1989, xiii, 23p. + appendix: statistical tables, En
A.I.D. evaluation occasional paper, no.24
Cover title: A.I.D. microenterprise stock-taking:
Dominican Republic field assessment
9311096

To help create productive employment for the Dominican Republic's growing urban population, A.I.D. is promoting micro- and small enterprise development. This report assesses the microenterprise programs of two A.I.D.-funded intermediary institutions—the *Asociacion Para el Desarrollo de Microempresas* (ADEMI) and the *Programa de Asistencia a la Pequena Empresa/Fondo para el Desarrollo* (PROAPE/FONDESA). Key findings are as follows. (1) ADEMI's experience shows that clear institutional objectives (e.g., the separation of credit and technical assistance activities) and the autonomy to pursue them lead to improved project performance. PROAPE/FONDESA's business development thrust is constrained by the social welfare orientation of its sponsor, the *Asociacion para el Desarrollo*. (2) Microenterprise projects should ensure equal access to project resources by women, especially by targeting the type of enterprises they operate. (3) Financial intermediaries can be self-sustaining if, like ADEMI, they charge positive real interest rates and have decentralized organizational structure, flexibility, well-trained staff, and sophisticated management. PROAPE/FONDESA's negative real interest rates are decapitalizing its portfolio. (4) Attempts by the intermediaries to "graduate" successful microenterprise clients to the formal banking system are unrealistic and, even if possible, would, undermine the intermediaries' own financial viability. (5) Government demand management and regulation were the most important factors in microenterprise success.

027

PN-ABC-708
MF \$1.08/PC \$4.42

A.I.D. microenterprise stock-taking: Bangladesh field assessment

Webster, Russell; Blakeslee, Katherine; Tzavaras,
Anastasia
Development Alternatives, Inc.
Robert R. Nathan Associates, Inc.
U.S. Agency for International Development. Bureau for
Program and Policy Coordination. Center for Develop-
ment Information and Evaluation (Sponsor)
Jul 1989, xiii, 13p. + appendix: charts, En
A.I.D. evaluation occasional paper, no.27
Cover title: A.I.D. microenterprise stock-taking:
Bangladesh field assessments
9311096

Part of USAID/Bangladesh's increasing focus on private enterprise, the Women's Entrepreneurship Development Project (WEDP) provides credit, training, and business support services to women-owned and -managed microenterprises in Bangladesh's more remote and rural areas. This assessment of WEDP, which is managed by the Bangladesh Small and Cottage Industries Corporation, finds that program impact has been appreciable; in a 1987 survey, 57% and 75% of WEDP clients reported increases in income and productivity, respectively, while 36% reported increases in employment. On the other hand, measurement of impact is constrained by lack of data on program services and client activities. WEDP's financial sustainability is a problem. The program does not generate any interest income to offset its operating expenses and by assisting clients with the loan approval process, WEDP is actually subsidizing the banks which provide the loans. Further, because its clients are mainly small entrepreneurs, WEDP is unlikely to collect fees for its services and in fact sustains significant losses in providing per diem and pocket money for its client trainees. Other factors hindering WEDP sustainability include the policy and regulatory environment governing capital markets, WEDP's cumbersome administrative practices, and the government's practice of cancelling interest payments after floods, which has been partially responsible for a drop in the loan

recovery rate from 80% to 47%. Policy- and program-related lessons taught by the WEPD program conclude the report.

028

PN-ABC-709
MF \$1.08/PC \$8.58

Microenterprise stock-taking: the financial institutions development, Puskowanjati Women's Cooperative, Maha Bhoga Marga, and Yayasan Dian Desa projects, Indonesia

Biddle, C. Stark; Sinha, Sanjay; et al.

Development Alternatives, Inc.

Robert R. Nathan Associates, Inc.

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

Jul 1989, xix, 42p. + appendix: statistical tables, En A.I.D. evaluation occasional paper, no.28

Cover title: A.I.D. microenterprise stock-taking:

Indonesia field assessments

9311096

A.I.D.'s efforts to support microenterprise development in Indonesia are assessed in this report. Major activities consist of support to rural credit institutions; the Puskowanjati Women's Cooperative, an umbrella organization of women's cooperatives; and the Maha Bhoga Marga and Yayasan Dian Desa private voluntary organizations. Except in the case of Yayasan Dian Desa, which concentrates

The experience of these projects shows that it is possible to assist the poor by treating them as entrepreneurs through a decentralized, business development approach rather than through poverty-focused programs.

on introducing appropriate technology to raise incomes and generate employment, A.I.D.'s support for these institutions has focused on strengthening their credit services.

All the projects established sound business procedures, displayed moderate to high levels of financial viability, and greatly increased the poor's access to institutional resources. In particular, the credit projects' low transaction costs and easy access are a benefit to the poor while high interest rates and a diversified portfolio ensure institutional sustainability. The net effect is increased employment and income generation, which stimulate economic growth through broad-based linkages and multiplier effects. In sum, the experience of these projects shows that it is possible, even in less than optimal economic and regulatory environments, to assist the poor by treating them as entrepreneurs through a decentralized, business development approach rather than through poverty-focused programs.

029

PN-ABD-137
MF \$2.16/PC \$15.60

Micro-lending guaranty fund, Accion International, Inc. / AITEC (Latin America) pre-project number 940-0002.44

Management Systems International, Inc.

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

[1989], iii, 89p. + 12 annexes: ill., charts, statistical tables, En

940000244

In 1985, A.I.D./PRE and ACCION International established a \$1 million fund to guarantee commercial bank loans which were provided to Latin American microenterprises through local ACCION affiliates. Results of the programs in Paraguay and Mexico are evaluated in this report. The report outlines the country settings, describes the affiliates and their operations, reviews the disbursement of loans and their impacts on beneficiaries, and assesses the project's institutional impact. Five major findings are detailed. (1) Because PRE funding was added to existing credit programs, it is difficult to determine the project's specific impact on borrowers. On the other hand, the project has positively benefited participating banks

PRIVATE ENTERPRISE

and affiliates by affording them access to funds from private financial markets. (2) The language of the model letter of credit used in the project may create difficulties with local banks; nine Paraguayan banks rejected the letter. The situation has improved notably, however, since the letter was simplified in March, 1989. (3) It may be necessary to waive some formal banking practices and the red tape they entail in order to reach large numbers of microenterprise borrowers. (4) The sustainability of a microenterprise program requires charging fees and interest rates that are sufficient to cover the program's real costs. This was not the case in Mexico. (5) Microenterprise lending programs should include a savings component to prevent borrowers from the consequences of unforeseen expenses. Recommendations for follow-on activities are included.

030 **PN-ABD-193**
MF \$2.16/PC \$13.52

Privatization survey for developing countries

Scientex Corporation
Center for Privatization
U.S. Agency for International Development. Bureau for
Private Enterprise. Office of Project Development
(Sponsor)
Jul 1989, iv, 93p., En
9400008

Privatization is an elusive concept. Its definition varies from country to country, as do the policy and economic regimes in which privatization takes place. Information is difficult to verify and sometimes conflicts with other sources. The significance of a given privatization is also difficult to quantify. A transaction involving relatively few assets in one country could possibly reflect policy changes that will have a more lasting impact on future economic development than a more extensive program would have in another country. This survey of privatization in the Third World defines a completed privatization transaction as a process in which a government moves from a majority to a minority share in an enterprise. Countries are presented alphabetically, by geographic region, (Asia and the Near East, sub-Saharan Africa, and Latin America and the

Caribbean). For each country, the survey provides an overview of privatization, briefly describes contributions of A.I.D.'s Center for Privatization, and details completed privatization transactions in terms of economic sector, type of enterprise, specific privatization activity (private sale, public share offering, sale, management contract, lease, liquidation, management/employee buyout, privatization plan/study, restructuring, and/or commercialization), and other relevant information. Special emphasis is placed on privatization activities of A.I.D.

031 **PN-ABD-362**
MF \$8.64/PC \$89.44

Problem of development: exploring economic development through free enterprise — proceedings of the Institute's first international conference, May 27–29, 1988

Ehrlich, Isaac, ed.; Hariharan, Govind, ed.; Lutter, Randall, ed.
State University of New York at Buffalo. School of Management, Institute for the Study of Free Enterprise
U.S. Agency for International Development. Bureau for Program and Policy Coordination. Office of Policy Development and Program Review (Sponsor)
(Institute's International Conference, 1st — Problem of Development : Exploring Economic Development Through Free Enterprise, Buffalo, NY, US, 27–29 May 1988)
May 1989, 2v.: charts, statistical tables, En
Contents: pt.1. Summary — pt.2. Papers and discussants' comments

The eight papers contained in these conference proceedings aim to expand the narrow neoclassical model of economic growth in order to explain the diversity of growth paths across different countries and time periods. The papers focus on the workshop's three principal themes: (1) the analysis of population growth and human capital formation as endogenous to the economy and to the economic growth process; (2) the interpretation of technological change as the effect of market forces rather than of scientific discoveries occurring independently of econom-

ic life; and (3) the examination of government as a significant economic player, possibly as an independent catalyst or engine of growth, but also as an initiator of policies that can have detrimental effects on the economy's growth rate. While the models developed in the papers differ in assumptions and hence in specific conclusions, certain common features emerged. (1) With one exception, the models agree with neoclassicism in refusing to see the accumulation of physical capital as an engine of growth. (2) All models demonstrate that decentralized economies are capable of persistent growth in personal income and consumption even without exogenous technological innovations. (3) The possibility of multiple growth equilibria is ruled out in the general competitive equilibrium models but is accepted in models which make specific assumptions concerning the relation between population growth and the propensity to save for the future. Includes summaries and full texts of the eight papers and summaries of workshop discussions.

032

PN-ABD-745

MF \$6.48/PC \$65.00

Privatization of input supply activities of the Principal Bank for Development and Agricultural Credit (PBDAC), Arab Republic of Egypt

Scientex Corporation
Center for Privatization

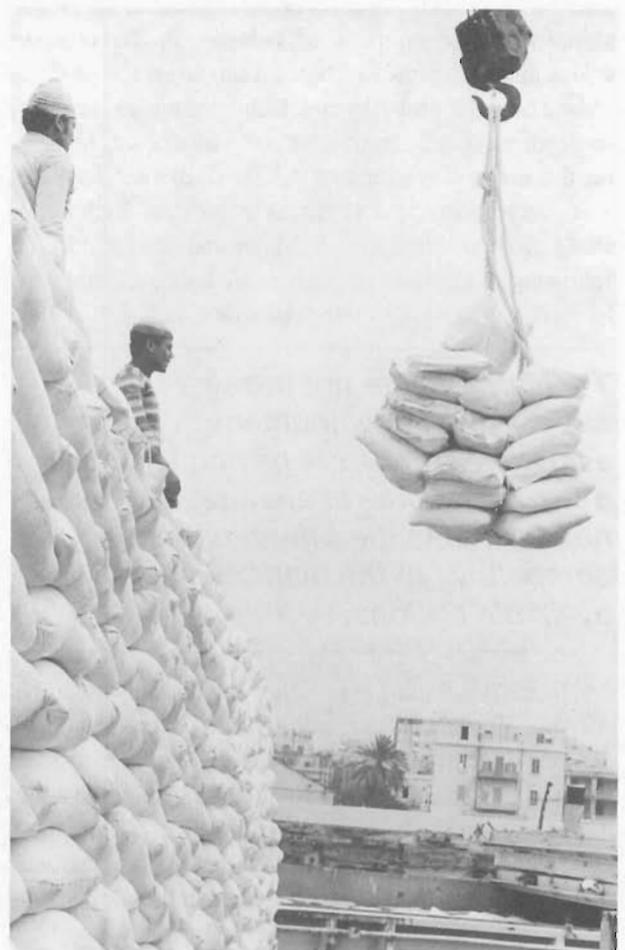
U.S. Agency for International Development. Bureau for Private Enterprise. Office of Project Development (Sponsor)

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

Apr 1989, 2v.: charts, statistical tables, En 9400008

Since the mid-1970's, Egypt has moved cautiously in allowing greater participation of the private sector in the national economy. Volume I of this report analyzes the proposed privatization of the input supply activities of Egypt's Principal Bank for Development and Agricultural Credit (PBDAC). It first describes the roles of the PBDAC and the private sector in the supply of agricultural inputs to

farmers. The dimensions and character of each individual input subsector — fertilizers, seed, agricultural chemicals, agricultural machinery and equipment, animal feed, and jute bags — are described. This is followed by two chapters analyzing the implications of privatization for the PBDAC's organization, staffing, and finances. The report recommends a gradual privatization (over 6-8 years) to allow the private sector ample time to take over the PBDAC's monopoly and to lessen the adverse effects on the PBDAC's income. Volume II of the report consists of the following annexes: a fertilizer review; an economic analysis dealing with removal of subsidies and application of world prices on inputs and farm products; the sociological assessment of farmers' and private sector attitudes towards privatization of inputs; and detailed findings about PBDAC's finances.



The Government of Egypt is developing plans to privatize the supply of agricultural inputs.

033

PN-AAX-224

MF \$1.08/PC \$4.42

Small farmer perspective on development: village survey in northeast Thailand — synthesis report

Solem, Richard Ray

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

Oct 1989, ix, 24p., En

A.I.D. evaluation special study, no.64

Related document: PN-ABC-399

Northeast Thailand, one of the poorest regions in Thailand, has long been a target of donor assistance. This report summarizes the opinions of villagers in the Weeping Plains area of Northeast Thailand on the effects of donor efforts over the past 20 years. Both group interviews and in-depth individual interviews were conducted, focusing on the major categories of A.I.D. assistance: fertilizer, seed, and agricultural credit. A contextual background study was conducted as well. Major findings included the following. (1) Physical infrastructure improvements were by far the most highly valued changes affecting the villag-

Thai farmers are not passive recipients of development assistance. Far from having to break down resistance to change, donors need to make their interventions competitive in the marketplace of available options.

ers' lives. This finding is especially noteworthy in light of A.I.D.'s withdrawal from such activities over the past two decades. (2) Government policy regarding rice prices has affected all agricultural activities, tending to inhibit adoption of high-yielding varieties despite efforts by A.I.D. and other donors to promote them. (3) Exogenous economic influences, such as the boom in cassava production, and migration to temporary employment elsewhere have been the source of most of the conspicuous wealth (e.g., automobiles and televisions) among villagers. (4) A.I.D.'s and

other donors' agricultural service projects are generally well regarded, with credit programs receiving the highest marks. (5) Thai farmers are not passive recipients of development assistance. Far from having to break down resistance to change, donors need to make their interventions competitive in the marketplace of available options.

034

*PN-ABD-177

MF \$3.24/PC \$34.84

Rice ratooning

International Rice Research Institute

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

1988, 279p.: ill., charts, statistical tables, En
936411102

**Also available from: International Rice Research Institute, P.O. Box 933, 1099 Manila, Philippines*

Ratooning, the ability of the rice plant to regenerate new panicle-bearing tillers after harvest, holds promise of increasing rice production per unit area and per unit time but has only recently been researched in a systematic way. For that reason, a conference was held in India to discuss the prospects and economics of rice ratooning, identify the cultural methods to manage the ratoon crop, and initiate collaborative testing of varieties known to have good ratooning ability. The conference proceedings herein presented cover the following topics: the morphology and physiology of rice ratoons (2 papers); ratooning experiences in various countries; (8 papers); evaluation and potential of rice ratooning (8 papers); cultural practices (8 papers); and genetics and varietal improvement (5 papers). These papers focused on the advantages of the rice ratoon crop — its lower production cost, greater productivity, and reduced irrigation water requirements. Disadvantages were also investigated — generally low yields, lack of varieties with good ratooning ability, uneven maturity, susceptibility to insects and diseases, and the lack of cultural practices for the ratoon crop. Recommendations are given to provide a framework for exploiting the advantages of rice ratooning and a strategy for overcoming its inherent problems.

035

***PN-ABD-248**
MF \$2.16/PC \$24.31

Nepal: organization and management of on-farm research in the national agricultural research system

Kayastha, Badri Nath; Mathema, Sudarshan Bhakta;
Rood, Peter

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

Jul 1989, xxxii, 159p.: charts, maps, statistical tables, En
OFCOR case study, no.4
936411103

**Also available from: International Service for National
Agricultural Research, P.O. Box 93375, 2509 AJ,
The Hague, Netherlands*

Nepal offers a wealth of innovative experiences in organizing and managing on-farm, client-centered research. This case study presents a comparative analysis of five such programs. The first three — the National Rice Improvement Program, the Cropping Systems Program, and the Farming Systems Research Division — are all part of the Ministry of Agriculture's research efforts. The remaining two — the Lumle and Pakhribas Agricultural Centres — are small regional research centers in the Hills, funded by the British Government but closely linked to the national research effort. Against a background description of the context of agricultural research in Nepal, the report outlines the organization and management of the five programs and critically compares their strengths and weaknesses in conducting on-farm research. It then analyzes the performance of each in terms of seven key functions of on-farm, client-centered research: adoption of a problem solving approach; adoption of an interdisciplinary perspective; use of agro-ecological and socioeconomic criteria to characterize major farming systems and client groups; technology adaptation and development; promotion of farmer participation in research; communication of research results to major experiment stations; and collaboration with extension and development agencies. In addition, the institutional factors that either facilitated or constrained program success are identified. A final section distills a

variety of lessons which the programs inculcate for organizing and managing on-farm research, and provides recommendations relating them to the Nepalese setting.

036

***PN-ABD-259**
MF \$2.16/PC \$14.69

Trends and prospects for cassava in Nigeria

Adamu, S.O.

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

May 1989, ix, 104p.: statistical tables, En
Working paper on cassava / International Food Policy
Research Institute, no.5
936411114

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

In Nigeria, cassava plays a vital role in alleviating famine and in providing a sustained food supply when other crops fail. This report examines the trends and prospects for Nigerian cassava production, utilization, and trade, with emphasis on expanding human consumption through adoption of improved processing and storage technologies. In this context the report examines the role of cassava in the farming system, the effect of technological improvements on rural employment and income, and the prospects for direct consumption of cassava as food in fresh and processed forms. The scope for cassava's utilization as feed, starch, and other purposes is also explored. Major findings are that cassava production and domestic utilization grew steadily until around 1970 and then fell throughout the early 1970's due to the oil boom and the large-scale migration of farmers to urban areas. After 1976, production and consumption began to rise again as the result of improved varieties and mechanized processing. Alternative scenarios for cassava trends in 1990 and 2000 are presented, followed by strategies to expand cassava's role in attaining Nigeria's overall economic goals through further research to improve both production and processing.

037

PN-ABD-324

MF \$2.16/PC \$16.64

Proceedings of the GASGA workshop on postharvest information management, April 17–19, 1989

Schenck-Hamlin, Donna, ed.

Kansas State University. Food and Feed Grain Institute
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Nutrition (Sponsor)
(GASGA Workshop on Postharvest Information Manage-
ment, Manhattan, KS, US, 17–19 Apr 1989)

Sep 1989, vii, 159p., En

Post harvest grain systems R&D special report, no.22
9364144

The seven papers contained in these conference proceedings identify the major deficiencies that result in information gaps within postharvest information systems. These problems include (1) lack of adequate local document collections for postharvest work in research, education and training, extension, technical assistance, public administration, and private sector postharvest processes; (2) lack of awareness of regional and international postharvest information resources; (3) lack of coordination among centers resulting in unnecessary duplication of effort; (4) slow speed of information delivery; and (5) lack of current directory information in the postharvest field. Participants agreed that these problems could be overcome by strengthening regional information systems, with each regional group linked with the others to facilitate a global exchange of postharvest information. An international directory identifying centers of postharvest specialization should be compiled and donor organizations should be approached for funding of regional institutions.

038

PN-ABD-334

MF \$8.64/PC \$90.74

Responding to the challenge: agricultural and rural development strategies for the 1990s — agriculture and rural development officers' conference

Hassan II Institute of Agriculture and Veterinary Medicine
U.S. Agency for International Development. Bureau for
Asia and Near East (Sponsor)

(Responding to the Challenge : Agricultural and Rural
Development Strategies for the 1990s — Agricultural
and Rural Development Officers' Conference, Rabat,
MA, 19–24 Feb 1989)

Feb 1989, v.p.: charts, statistical table, En

The main objective of the Asia/Near East Bureau's 1989 Agricultural and Rural Development Officers conference was to reach a consensus on a draft strategy for rural economic growth in the 1990's — one that adopts a demand-driven paradigm and uses rural income and employment as the key determinants of that process. The strategy recommends that resources be allocated on the basis of a country's performance in achieving sustained economic growth. Investments under the strategy will be made in six priority areas, depending on category and situation-specific considerations: agricultural innovation, natural resource management, human and institutional capital, trade and market development, agricultural business, and planning and infrastructure. Participants expressed strong agreement with the strategy's emphases, highlighted its strengths, and debated on ways to improve the plan. Other discussions dealt with: (1) the draft strategy vis-a-vis actual country experiences; (2) resource issues for the 1990's, including integrating food aid and development, advances in microcomputer technology, A.I.D. personnel and financial resource trends, proposals for A.I.D.'s reorganization, and the role of trade and U.S. agricultural interests; (3) draft natural resources and science and technology strategies; (4) the strategic role of agricultural universities in the coming decade; and (5) the implications of strategy implementation and proposed next steps.

039

***PN-ABD-370**
MF \$4.32/PC \$49.27

Research management in agriculture and natural resources in the Philippines: proceedings of the workshop on research management in agriculture and natural resources in the Philippines, Development Academy of the Philippines, Tagaytay City, 13-17 June 1988

International Service for National Agricultural Research Philippines. Ministry of Agriculture. National Science & Technology Authority. Philippine Council for Agriculture, Forestry & Natural Resources Research & Development (Sponsor)

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

U.S. Agency for International Development. Bureau for Asia and Near East. Philippines (Sponsor)
(Workshop on Research Management in Agriculture and Natural Resources in the Philippines, Tagaytay City, PH, 13-17 Jun 1988)

1989, x, 370p.: charts, En

Book series / PCARRD, no.82

4920366; 936411113

**Also available from: Philippine Council for Agriculture, Forestry and Natural Resources Research and Development, Los Banos, Laguna, Philippines*

To a large extent, the ability of a nation to feed its growing population rests on the efficiency and effectiveness of its national agricultural research system. This document presents the proceedings of a five-day workshop on agricultural research management in the Philippines, and considers research management problems at the national, regional, institutional, and project levels. The complete texts of 34 presentations are included, arranged in three modules: (1) selected issues in agricultural research management (including discussions of organizational design, priority setting and resource allocation, personnel management, leadership, etc.); (2) planning for research and development (R&D) in agriculture and natu-

ral resources (planning for R&D in the agriculture sector, a systems approach in planning natural resources R&D projects, R&D planning at the institutional level, etc.); and (3) building and managing the national research system in agriculture and natural resources (enhancing R&D in the Philippines Department of Agriculture, experiences in the utilization of research information, strengthening research capabilities, managing research-extension linkages, etc.). Includes charts, tables.

040

***PN-ABD-374**
MF \$1.08/PC \$2.86

Japan and Third World agricultural development

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

Sep 1989, [20]p.: charts, statistical tables, En
IFPRI policy briefs, no.4
936411114

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

Issues affecting agricultural development worldwide and the related significance of Japan's agriculturally led development experience are highlighted in this collection of policy briefs written by both U.S. and Japanese experts. Two briefs examine the relevance to the Third World of Japan's success in using agricultural development to transform its economy from one that was low income and primarily agricultural into a major industrial power. A third brief discusses the initiatives and goals of international institutions in promoting agricultural development in Asia and elsewhere in the Third World, while a fourth discusses constraints to agricultural development posed by foreign trade regimes that penalize the production of agricultural goods in favor of industrial-import substitutes. Another brief, more general in nature, reviews international trends in economic assistance over the past 20 years as well as changes in Japan's assistance policies. It then presents general recommendations for reshaping the direc-

tion of Japan's assistance strategy to promote imports from developing countries. Each brief is followed by comments from other experts.

041 **PN-ABD-394**
MF \$1.08/PC \$6.50

Comparison of traditional and improved methods of farm maize storage in Honduras

Espinal, Jose R.; Pedersen, John R.
Kansas State University. Food and Feed Grain Institute
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Nutrition (Sponsor)
Sep 1989, vii, 37p. + 6 appendices: ill., charts, statistical
tables, En
Postharvest grain systems R&D research report, no.31
9364144

The traditional method for storing maize in Honduras is ineffective against the main pests that attack the crop. This report presents results of a study comparing this traditional method with a new storage method which involves: (1) storing the maize on a platform (rather than on the ground) and cleaning and disinfecting the storage area prior to storing the maize; and (2) protecting the stored grain against pests by using either anhydrous lime or the insecticide Actellic. After reviewing literature on the subject, the report outlines the study's methodology, which consisted of field experiments of the new method (using the traditional method as a control) at three village farm sites, along with a parallel effort at an experimental station in Tegucigalpa. The results of these experiments are discussed in detail. A brief final section lists the following conclusions. (1) The improved method of storing ears of maize in the husk using Actellic was effective in reducing storage losses. (2) The use of lime in conjunction with the improved storage method gave variable results, and its effectiveness should be more fully evaluated. (3) Storage improvements tend to reduce maize losses, but do not eliminate them. (4) Good hygiene and proper selection of maize for storage are the most important aspects of the improved method. (5) Based on the overall mean percent losses, the improved method using Actellic or lime resulted in an economic advantage for the farmer.

042 ***PN-ABD-452**
MF \$3.24/PC \$35.49

Social sciences in international agricultural research: lessons from the CRSPs

McCorkle, Constance M., ed.
U.S. Agency for International Development. Bureau for
Science and Technology
1989, xix, 266p. : charts, statistical tables, En
Published by Lynne Rienner Publishers, Inc.
Includes references and index
9311328
**Also available from: Lynne Rienner Publishers, Inc.,
1800 30th St., Boulder, CO 80301 USA*

A key role in A.I.D.'s Collaborative Research Support Programs (CRSP's) is played by social scientists, who help balance research biases by translating the abstract goals of agricultural researchers into practices that are acceptable to agricultural producers. This collection of essays identifies the specific ways that input from the social sciences has directly enhanced the focus and implementation of agricultural research. The book reviews procedures used to develop technologies for farmers, describes on-farm research, and addresses the policy context of agricultural research in relation to the cultural, social, and economic realities of smallholder producers. Papers cover the following CRSP's: sorghum/millet (four papers), nutrition (two papers), bean/cowpea (two papers), peanut (one paper), and small ruminants (two papers). The final section presents commentary by four technical scientists on the role of the social sciences in agricultural research and technology evaluation and generation. An introduction stresses the advantages which the CRSP interdisciplinary model has over more traditional research approaches in using existing resources, mobilizing additional support, and focusing on what is achievable in improving livestock and crop production and sustaining natural resources.

043

***PN-ABD-457**
MF \$3.24/PC \$3.77

Human geography of rice in South Asia

Huke, R.E.; Huke, E.H.

International Rice Research Institute

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

1988, i, 23p.: oversized maps, statistical tables, En
936411102

**Also available from: International Rice Research
Institute, P.O. Box 933, 1099 Manila, Philippines*

Crop research generally restricts its attention to a given area's physical geography even though the area may cut across several human environments of critical importance in assessing the potential impact of new farming methods. This report presents a data base on the human environment of the rice production system in South Asia, including India, Bangladesh, Pakistan, Nepal, and Sri Lanka. An introduction describes the data gathering and reporting methods used in each of the five countries. The bulk of the report consists of 22 tables (16 on India, 1 on each of the remaining countries) listing rice area by culture type, farmholding data, and employment data. The report also provides two oversize maps, showing (1) employment in rice farming, and (2) farm size and number of rice holdings by state.

044

PN-ABD-584
MF \$3.24/PC \$28.21

Liberia agricultural marketing study

Hughes, David; Muir, Kerry; et al.

Robert R. Nathan Associates, Inc.

Abt Associates, Inc.

University of Idaho. Postharvest Institute for Perishables
Deloitte, Haskins and Sells

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

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

Jun 1989, v, 168p. + 4 annexes: statistical tables, En
9365447

Major factors constraining the development and growth of cash crop farming in Liberia are identified in this analysis of the marketing channels for rice, coffee, cocoa, and fresh produce. The study finds that the cornerstone of the Government of Liberia's (GOL) agricultural policy — attaining rice self-sufficiency — has failed, trapping small farmers in a vicious circle: satisfying household rice requirements exhausts the labor available for producing cash crops, while efforts to purchase imported rice exhaust scarce cash resources. The profitability of cash crop production is further constrained by low cocoa and coffee prices, the lack of transportation infrastructure, an inefficient and corrupt marketing system, and an exchange rate policy unfavorable to producers of export crops. Given the paucity of profitable cash crop alternatives, small farmers are forced into subsistence rice farming while obtaining cash income from family members working on rubber estate, in mines, or in urban areas. Arguing the need for external pressure on the GOL to break this vicious circle, the report recommends firmly tying the continuance of P.L. 480 shipments — essential for meeting urban consumers' grain needs — to policy changes. Chief among these are introducing a more market-oriented exchange policy; adjusting domestic rice prices to reflect border price parity; keeping the GOL's powerful Liberian Produce Marketing Corporation out of rice importing and domestic rice marketing; and liberalizing cocoa and coffee marketing to allow the private sector to compete with the LPMC in buying and selling these commodities.

AGRICULTURE

045

*PN-ABD-657

MF \$2.16/PC \$14.82

Approaches to research on draught animal power in Indonesia, Ethiopia and Australia

Petheram, R.J.; Goe, M.R.; Astatke, Abiye
James Cook University. Graduate School of Tropical
Veterinary Science
International Livestock Centre for Africa
Research Institute for Animal Production
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Agriculture
(Sponsor)
1989, 115p.: ill., En
936411109
**Also available from: International Livestock Centre for
Africa, P.O. Box 5689, Addis Ababa, Ethiopia*

Examples of research on draft animal power undertaken in Indonesia, Ethiopia, and Australia are summarized in this report. Activities focused on the following topics: animal health (2), cropping (2), economics (2), engineering (7), feed (9), farming systems research (6), physiology (7), and work output (2). The different approaches taken by scientists in the three countries and the apparent strengths, weaknesses, and relevance of various types of research are examined. The report also cites types of research that have been lacking in these countries which may warrant higher priority in the future. To date, the results of draft animal power in these countries have provided a greater understanding of: how working animals are used in various farming systems; the effect of work on intake and digestion; how various metabolites are used during work; how work affects body condition and reproductive cycling; how to interest farmers in participating in research; ideas for on-farm testing; and promising areas for future experimentation. A concluding section stresses the importance of, inter alia, strengthening linkages between academic and applied scientists, striking a realistic balance between on-farm and on-station research, developing simpler animal traction implements, and assessing alternative uses of draft animal power.

046

*PN-ABD-658

MF \$2.16/PC \$13.13

Agricultural progress in the Third World and its effect on U.S. farm exports: a special study

U.S. Congressional Budget Office
May 1989, xxvii, 78p.: charts, statistical tables, En
**Also available from: Congressional Budget Office,
Second and D Sts., SW, Washington, DC 20515 USA*

Total U.S. farm exports to the Third World have grown fivefold since 1970, representing by 1987 about 41% of all U.S. agricultural exports and two-thirds of food grain exports. This report charts Third World economic growth and agricultural trends in relation to U.S. agricultural exports and discusses the impact of U.S. policies on agriculture in developing countries. The report dispels the

The report dispels the fear expressed by some farm groups that advances in agriculture abroad may create competition for U.S. agricultural exports. To the contrary, developing countries are most likely to expand their food imports when their economies are growing and their agricultural sectors are prosperous.

fear expressed by some farm groups that advances in agriculture abroad may create competition for U.S. agricultural exports. To the contrary, developing countries are most likely to expand their food imports when their economies are growing and their agricultural sectors are prosperous. The downturn in U.S. agricultural exports during the 1980's is attributed not to Third World agricultural advances but to a combination of stagnant world demand and the loss of a share of the world market to foreign competitors. The report thus suggests that U.S. efforts to expand farm exports should focus on stimulating economic growth, including that of agriculture, in developing countries.

047

*PN-ABD-735
MF \$2.16/PC \$18.85

Food oils in Africa: directory

Private Agencies Collaborating Together
U.S. Agency for International Development. Bureau for
Food for Peace and Voluntary Assistance. Office of
Private and Voluntary Cooperation (Sponsor)
03 Mar 1989, vii, 155p., En
9380264

**Also available from: PACT, Inc., 777 United Nations
Plaza, New York, New York 10017 U.S.A.
Free to African addresses. Elsewhere \$10.*

Designed to encourage communication among grass-roots organizations and individuals involved in small-scale food oil processing in Africa, this directory describes 67 such agencies and individuals, in 20 African countries. Entries are arranged alphabetically, and include: address and contact person; brief profile of project and/or activities, including project objective and location, type of oil being processed, technology used, stage of project, and difficulties encountered; topics on which the agency/individual desires additional information; and the type of assistance the agency/individual can provide to others. Nine indexes are given — one each for cooperatives, country, crop development, data bank, oils, publications, research, soap making, and technology level.



Extension workers inspect a small-scale palm oil processing operation in Liberia.

048

*PN-ABD-246
MF \$3.24/PC \$34.06

Diseases and insect pests of mungbean and blackgram: a bibliography

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

Feb 1988, vi, 254p., En

AVRDC publication no.88-288

AVRDC library bibliography series, no.5

936411105

**Also available from: Asian Vegetable Research and
Development Center, P.O. Box 42, Shanhua 741 Taiwan*

Developed for use by vegetable researchers in Third World countries, this bibliography cites 800 journal articles, books, and reports on the diseases and insect pests of mungbean and blackgram. Disease-specific entries are given in Part II and cover disease resistance and disease-resistant plant varieties, disease types (viral, mycoplasma-like, bacterial, and fungal diseases), nematodes, and physiological disorders. Part III, on insect pests, provides listings on pest resistance, beanflies, whiteflies, pod borers, aphids, other polyphagous insects, and stored pests. Includes author and subject indexes.

049

*PN-ABD-277

MF \$2.16/PC \$17.55

Underground crops: long-term trends in production of roots and tubers

Horton, Douglas

Winrock International Institute for Agricultural Development

International Potato Center

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

1988, [130]p.: statistical tables, En

936411107

**Also available from: Winrock International Institute for Agricultural Development, Morrilton, AR 72110 USA*

Agricultural research and development efforts have traditionally focused on export crops and major cereals while paying little attention to root crops and tubers. The latter are often considered inferior foods or "starchy staples" that provide low-cost energy but little else to the human diet. Yet many root crops are rich in protein relative to some cereals and can contribute significant amounts of essential dietary vitamins, minerals, and ascorbic acid. This report, a sign of researchers' growing awareness of the food crop potential of roots and tubers, presents 31 tables containing the most up-to-date country-level estimates (as determined by the FAO) of the production and use of five major groups of root crops: cassava (*Manihot esculenta*), edible aroids (principally *Colocasia esculenta* and *Xanthosoma* spp.), potatoes (*Solanum tuberosum*), sweet potatoes (*Ipomoea batatas*), and yams (*Dioscorea* spp.). Tables 1–18 present annual estimates of root crop production, area, and yield from 1961 to 1985; only countries that reported production of 500 tons or more in at least one year during the period are included. Tables 19–21 summarize average root crop production, area, and yields for 1983–85 for countries with an average production of 500 tons or more during the period, while tables 22–31 present information on root crop utilization, including consumption, dietary contribution, international trade, and prices. An introduction describes the characteristics of the major root crops and includes a note on African root crop data.

050

*PN-ABD-789

MF \$2.16/PC \$15.73

Pigeonpea and chickpea insect identification handbook

Reed, W.; Lateef, S.S.; et al.

International Crops Research Institute for the Semi-Arid Tropics

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

1989, 120p.: ill., En

ICRISAT information bulletin, no.26

936411106

**Also available from: International Crops Research Institute for the Semi-Arid Tropics, Patancheru, A.P. 502 324 India*

Pigeonpea and chickpea, the two major pulse crops in the semiarid tropics, are attacked by several insect pests at different stages of plant growth, and often suffer severe yield losses as a result. This handbook identifies the major insects which damage pigeonpea (34 pests) and chickpea (11 pests) by attacking roots, stems, foliage, flowers, and pods, or, in the case of chickpea, stored seeds. Each entry briefly describes insect distribution and biology, damage symptoms, and suggested control measures. The bulletin also lists pigeonpea and chickpea animal pests (e.g., birds, rodents) as well as insects beneficial to the crops (e.g., pollinators, predators, and parasitoids). The text is supported by 128 photographs to help identify the crop pests, although the difficulty of identifying insect pests from photographs is highlighted. Pigeonpea is especially sensitive to pest attacks, hosting over 150 species of insects in India alone. Although many insects feed upon pigeonpea from the seedling stage, most of the economic damage is caused by pests that feed upon flowers and pods. Chickpea, in contrast, has far fewer pests due to certain natural advantages, notably its growing season (during or just after winter, when insect populations are generally low) and its glandular trichomes, which exude an acidic liquid to deter potential herbivores.

051

***PN-ABD-790**
MF \$5.40/PC \$52.26

Aflatoxin contamination of groundnut: proceedings of the international workshop, 6–9 Oct. 1987, ICRISAT Center, India

International Crops Research Institute for the Semi-Arid Tropics

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

(International Workshop on Aflatoxin Contamination of Groundnut, Patancheru, IN, 6–9 Oct 1987)

1989, 423p.: charts, statistical tables, En
936411106

**Also available from: International Crops Research Institute for the Semi-Arid Tropics, Patancheru, A.P. 502 324 India*

Aflatoxin contamination of groundnuts, produced by certain strains of the fungus *Aspergillus flavus*, poses a serious health hazard to livestock and is a possible cause of liver cancer in humans. This document presents the proceedings of an international workshop on aflatoxin contamination of groundnuts held in October 1987. The document contains a general overview of the problem, followed by 42 papers grouped to cover the following topics: health risks of aflatoxins (2 papers), aflatoxins and groundnut trade (2 papers), efforts to monitor and control aflatoxins at the national level (10 papers), removal of aflatoxins (4 papers), methods of aflatoxins analysis (4 papers), general research on aflatoxin contamination (10 papers), and genetic resistance to aflatoxins in groundnut (10 papers). Also included are group discussion reports on: evaluation and monitoring of aflatoxin contamination of groundnuts and groundnut products; analytical methods; research on on-farm control of aflatoxin contamination; and research on control with reference to storage, transit, processing etc. Recommendations cover information and training, strategies for control, and future research needs. The discussion reports and recommendations are presented in English, French, and Spanish. Includes references, charts, tables. (Author abstract, modified)

052

***PN-ABD-791**
MF \$3.24/PC \$28.08

Proceedings of the third regional groundnut workshop for southern Africa

International Crops Research Institute for the Semi-Arid Tropics

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

(Regional Groundnut Workshop for Southern Africa, 3rd, Lilongwe, MW, 13–18 Mar 1988)

1989, 232p.: charts, statistical tables, En, Summaries in Fr, Pt, En

Abstracts of individual articles provided in Portuguese as well as English

936411106

**Also available from: International Crops Research Institute for the Semi-Arid Tropics, Patancheru, A.P. 502 324 India*

In March 1988 a workshop held in Malawi brought together 41 scientists from various national and regional institutions and ICRISAT to discuss groundnut production in Southern Africa. The workshop included 30 papers on: groundnut breeding (7 papers), entomology (2 papers), agronomy and special topics, such as aflatoxin detection, (7 papers), early leaf spot disease of groundnut (6 papers), the state of groundnut research in individual Southern African countries (6 papers), and ICRISAT regional programs (2 papers). This report presents the text of the papers and of the discussions that followed, and presents nine specific recommendations for future groundnut activities in the region.

053

*PN-ABD-111
MF \$1.08/PC \$1.69

P_i soil phosphorus test: a new approach to testing for soil phosphorus

Menon, R.G.; Chien, S.H.; Hammond, L.L.
International Fertilizer Development Center
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Agriculture
(Sponsor)

Jul 1989, 10p.: ill., En
Reference manual R-7
9310054

**Also available from: International Fertilizer
Development Center, P.O. Box 2040, Muscle Shoals,
AL 35662 USA*

There are many soil tests for determining plant-available phosphorus (P) in soils. Some of these work well in certain types of soil and not in others. Some have wider applicability but are not used in large-scale routine soil testing due to analytical difficulties or inconvenience. A new approach to soil testing for plant-available P is being evaluated at the International Fertilizer Development Center (IFDC), using iron oxide-coated filter paper strips (P_i strips) as collectors for the P in the soil suspension. The new soil test, the P_i-P test, has been found to work well in acid as well as alkaline and calcareous soils. Laboratory and greenhouse studies have shown that the P_i test has a good potential as a reliable soil test for P with wide applicability. Moreover, the technology is appropriate to soil testing institutions in developing countries. However, before the test can be used for fertilizer recommendations, the P_i test needs to be calibrated with field data. Work on this has already been initiated. For reliability and precision, standardization of methodology is very important. This handbook describes the P_i methodology. It explains in simple terms the various steps involved in the preparation and use of P_i strips. No attempt has been made to evolve guidelines for the interpretation of the P_i-P data for fertilizer recommendations. The handbook is intended for those who are interested in including the new test in their soil test calibration studies and for those who are cooperating with IFDC in P_i research. (Author abstract)

054

*PN-ABD-285
MF \$1.08/PC \$1.69

Agronomic evaluation of partially acidulated phosphate rocks in the tropics: IFDC's experience

Chien, S.H.; Hammond, L.L.
International Fertilizer Development Center
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Agriculture
(Sponsor)

Oct 1988, 10p.: charts, statistical tables, En
Paper series IFDC, no.P-7
9310054

**Also available from: International Fertilizer
Development Center, P.O. Box 2040, Muscle Shoals,
AL 35662 USA*

Phosphorus (P) is critically needed to improve the soil fertility in many developing countries, but the high cost of conventional, water-soluble P fertilizers constrains their use by resource-poor farmers. Finely ground phosphate rock (PR) for direct application has been tested and used on tropical acid soils as a low-cost alternative where indigenous deposits of PR are located. However, direct application of PR with low reactivity or with inappropriate soil/crop combinations does not always give satisfactory results. Partial acidulation of PR (PAPR) represents a technology that can be used to produce highly effective P fertilizers from those indigenous deposits. The International Fertilizer Development Center (IFDC) has developed a continuous process that combines partial acidulation and granulation into a single step. Numerous field trials conducted by IFDC in Asia, sub-Saharan Africa, and Latin America have demonstrated that PAPR at 50% acidulation with H₂SO₄ or at 20% with H₃PO₄ approaches the effectiveness of single superphosphate or triple superphosphate fertilizers in certain tropical soils and crops. This paper also discusses important factors in the agronomic effectiveness of PAPR. These include (1) mineralogical composition and reactivity of PR used and (2) soil properties and soil reactions. (Author abstract)

055

***PN-ABD-287**
MF \$1.08/PC \$2.21

Fertilizer production and supply constraints and options in Sub-Saharan Africa

Schultz, J.J.; Parish, D.H.
International Fertilizer Development Center
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Agriculture
(Sponsor)

May 1989, 14p.: charts, statistical tables, En
Paper series IFDC, no.P-10
9310054

**Also available from: International Fertilizer
Development Center, P.O. Box 2040, Muscle Shoals,
AL 35662 USA*

Sub-Saharan Africa accounts for about 9% of the global population but uses less than 1% of the world's fertilizer. This study examines sub-Saharan Africa's fertilizer production and supply constraints and assesses available options in these areas. Key findings are as follows. (1) Growth in fertilizer consumption has been slow and erratic, except in those export- and import-substitution crop sectors that have historically enjoyed sound management, technical infrastructure, and fiscal responsibility. Unfortunately, it is difficult to emulate these sound management practices in a setting in which several government agencies are charged with separate aspects of agricultural development. (2) In this environment, investment in local fertilizer production facilities must be viewed with a good deal of caution, as there would be an ongoing need for foreign exchange to recover investments and purchase the raw materials and other inputs needed to sustain cost-effective production. Joint ventures and other cooperative agreements are more likely to result in cost-effective and secure fertilizer supply. (3) Improved efficiency in fertilizer production, supply, and distribution in both the short and long term seems heavily dependent on the degree of stability, management skill, and financial autonomy and responsibility that is effectively deployed throughout the agricultural sector.

056

***PN-ABD-288**
MF \$3.24/PC \$35.49

Global fertilizer perspective, 1960–95: the dynamics of growth and structural change

Bumb, Balu L.
International Fertilizer Development Center
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Agriculture
(Sponsor)

Jun 1989, xv, 243p. + 4 appendices: charts, statistical
tables, En

Technical bulletin / International Fertilizer Development
Center, no.T-34

9310054

**Also available from: International Fertilizer
Development Center, P.O. Box 2040, Muscle Shoals,
AL 35662 USA*

Despite the growing need for higher agricultural yields, the 1980's witnessed a considerable slowdown worldwide in fertilizer use growth and near stagnation in per capita fertilizer use — a sharp reversal of the trends of the 1970's. This study examines how various factors, including the policy environment, have influenced global and regional fertilizer use and production during the last quarter of a century. These findings are then used to develop projections for (1) demand, supply, and prices through 1995 and (2) food security and fertilizer use through the year 2000 in the developing world. According to the report, slowed growth in fertilizer use during the 1980's was heavily influenced by factors outside the fertilizer sector, most notably the low crop prices in North America, Western Europe, and Oceania; acreage reduction programs in North America; debt crises and foreign exchange shortages in Latin America; and unfavorable weather in Asia. The study indicates that many developing regions will require a higher than projected growth in fertilizer use to achieve significant improvements in the nutritional levels of their populations in the 1990's. However, there is considerable potential for increasing fertilizer use in these regions by improving physical and institutional infrastructures and marketing systems and by adopting suitable policies and

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programs. Moreover, the opportunity exists for improving fertilizer use efficiency so that more crop output can be obtained from the same level of nutrient use.

057 **PN-ABD-805**
MF \$2.16/PC \$14.43

Fertilizer utilization practices and crop response research: recommendations for the fertilizer sub-sector reform program of Cameroon

Minot, Nicholas; Johnson, Jerry J.
Abt Associates, Inc.
University of Idaho. Postharvest Institute for Perishables
Deloitte, Haskins and Sells
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. Cameroon (Sponsor)
Oct 1989, xi, 96p.: statistical tables, En
9365447

Since the mid-1970's, fertilizer consumption in Cameroon has tripled to over 100,000 metric tons per year, 60% of which is subsidized. However, the use of fertilizer varies considerably among provinces, with the West, Littoral, and the three northern provinces representing three-quarters of total fertilizer consumption, and the South and Center Provinces together accounting for less than 2%. Part I of this report analyzes the reasons behind the unevenness of fertilizer use in Cameroon. To a large degree, the patterns reflect the different crops grown in each province. Cotton, coffee, and food crops, the important crops in the areas of high fertilizer use, are usually fertilized in all areas. By contrast, cocoa and root crops, the most significant in the South and Center, are rarely fertilized. However, even for a given crop, fertilization rates are higher in the provinces of high overall fertilizer consumption. This may be because greater use of fertilizer in a region helps establish supply lines which, in turn, facilitate fertilizer use among farmers who would not otherwise use it. Additional factors affecting fertilizer use include farmers' purchasing power, cropping patterns, distance to major roads, population

density, and the effectiveness of local supply institutions such as cooperatives. Part II of the report reviews fertilizer crop response research in Cameroon, including projects to improve coffee, maize, and other food crop yields. Recommendations are then presented for future research activities, such as the development of a national fertilizer response data base, on-farm fertilizer response trials, farmer demonstrations, strengthening of governmental research institutions, and soil ecology.

058 ***PN-ABD-373**
MF \$2.16/PC \$15.60

Irrigation technology and commercialization of rice in The Gambia: effects on income and nutrition

von Braun, Joachim; Puetz, Detlev; Webb, Patrick
International Food Policy Research Institute
U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture (Sponsor)
Aug 1989, 116p.: charts, maps, statistical tables, En
Research report / International Food Policy Research Institute, no.75
936411114
**Also available from: International Food Policy Research Institute, 1776 Massachusetts Avenue, NW, Washington, DC 20036 USA*

The potential for improving household-level food security in sub-Saharan Africa through new agricultural technology is assessed in this report. The study focuses on a project in The Gambia which introduced mechanical pump irrigation and improved drainage for rainfed and tidal irrigation to some 7,500 rice farmers. Production in the project takes place under fully water-controlled conditions that provide two crops per year, and also under partly water-controlled conditions that provide only one crop. The study shows that rice yields comparable to the highest yields in Asia can be obtained in Africa (although there is a crucial need to reduce the high costs of African irrigation schemes). By selling rice surpluses, project participants raised their real incomes by an average of 13% per house-

hold. It was noted that even a 10% income increase leads to a 9.4% increase in food expenditures and a 4.8% increase in calorie consumption. However, the reduction of malnutrition in the project area cannot be solved through food supply and income increases alone; more effective rural health services and sanitation are also needed. The report also stresses the importance of involving women in the use of new technology, especially through increased access to credit. Another emphasis of the study is the very high substitution effects between irrigated crops and rainfed crops because of swift labor movements between them.

059

***PN-ABD-792**

MF \$4.32/PC \$40.30

Public intervention in farmer-managed irrigation systems

International Irrigation Management Institute
Nepal. Ministry of Water Resources. Water and Energy
Commission Secretariat (Sponsor)

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

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

(Public Intervention in Farmer-Managed Irrigation
Systems, Kathmandu, NP, 3-6 Aug 1986)

1987, 306p.: charts, statistical tables, En

IIMI pub 86-21

9364127

**Also available from: International Irrigation
Management Institute, Digana Village via Kandy,
Sri Lanka*

A growing recognition of the importance of farmer-managed irrigation systems has led public irrigation agencies to assist these systems by increasing the water supply and improving its reliability. The results of such assistance have been mixed, sometimes strengthening farmer organizations, at other times leading farmers to forego responsibility for the systems or even to bypass new structures altogether. Presented here are proceedings of a conference devoted to these issues. Ten papers on recent or ongoing research deal mostly with situations or programs involving

public intervention in farmer-managed irrigation systems in Asia and Africa. Four papers written by irrigation agency staff address some of the problems agencies face in providing assistance to farmer-managed irrigation systems. Three final papers deal with the interaction among researchers and agency personnel, and how research is used to modify and improve agency programs to assist farmer-managed systems. Also included is a keynote paper, which reviews research conducted on farmer-managed irrigation systems over the past decade and suggests an agenda for future research. A major theme of current research is that, before intervening, agencies should understand how the existing farmer-managed systems are organized, the way they carry out irrigation activities, and the environment in which they operate. Since many countries lack information about the daily operation of farmer-managed systems, collaboration between researchers and agency personnel is strongly needed.

060

PN-ABD-799

MF \$3.24/PC \$27.17

Medium scale irrigation systems in northeast Thailand: future directions

Johnson, Sam H., III; Patamatamkul, Sanguan; et al.
Camp Dresser and McKee, Inc.

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

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

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

Sep 1989, xxiv, 198p.: charts, maps, statistical tables, En
4930312; 3980289

Appropriate sites for new irrigation development are increasingly hard to find, and many countries are choosing to rehabilitate existing systems instead. This study assesses the effectiveness and replicability of the Northeast Small Scale Irrigation Project (NESSI), which involved rehabilitation of seven medium-scale irrigation systems in Northeast Thailand. Despite its excessive complexity, the project's management structure has largely been effective at the national, provincial, and project levels. NESSI has

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also made a generally positive contribution to farmer participation in water management by forming *chaek* groups and reviving water user associations. However, farmer involvement has been limited to the on-farm system, primarily the farm ditch. Extension activities have been less successful, due mainly to a reliance on traditional techniques and a failure to respond to the changing economic climate in the region. Also, marketing assistance was provided only prior to completion of the irrigation sites, and by the time farmers were able to actually produce additional dry season crops, was no longer available.

Technically, NESSI's on-farm engineering design was effective, but its exceptional cost limits the areas that can be rehabilitated using this design. Economically, NESSI has been a success, yielding a return rate greater than 10% on four sites, and helping increase family incomes 20–50% in three areas. A major factor in this success has been the Thai government's encouragement of private investment in the region. Includes recommendations for the next phase of medium-scale irrigation systems development in North-east Thailand.



Widespread hunger is not simply a technical or political problem, but an ethical failure to commit the resources needed to redistribute food from surplus countries to food-deficit countries.

061

PN-ABB-357
MF \$2.16/PC \$18.59

Science, ethics, and food: papers and proceedings of a colloquium organized by the Smithsonian Institution

LeMay, Brian W.J., ed.
U.S. Smithsonian Institution
International Rice Research Institute
U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture (Sponsor)
(Colloquium on Science, Ethics, and Food, Washington, DC, US)
1988, 144p.: ill., charts, statistical tables, En
Published by Smithsonian Institution Press
Includes references
936411102

The complex technological and ethical dimensions of the problem of hunger were explored in a colloquium held on the occasion of the first awarding of the World Food Prize. The proceedings, presented here, consist of four papers, followed by summaries of discussions by colloquium participants. The initial paper, an ethical reflection on the human right to food, stresses the communitarian context of individual rights and espouses the criteria enunciated by Bread for the World, a Washington-based advocacy group, for judging the acceptability of U.S. agricultural policies relative to protecting and promoting the right to food. The second paper stresses two prerequisites for developing a sustainable system of agricultural production in Africa — a revolution in health care, and the development of low-input, low-cost solutions that incorporate rather than abandon traditional practices and resources. The third paper probes the extent to which both chronic hunger and transient famines stem from declines in “food entitlements” (command over one’s food supply) caused by the dysfunctioning of the various links in the economic food chain (i.e., production, distribution, and utilization). The final paper envisions widespread hunger as not simply a technical or a political problem, but as an ethical failure to commit the resources needed to redistribute food from surplus countries to food-deficit countries. The strategic actions needed to reform this situation are outlined.

062

*PN-ABD-112
MF \$2.16/PC \$25.09

Food aid projections for the decade of the 1990's

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 Private and Development Cooperation. Office of Private and Voluntary Cooperation (Sponsor)
U.S. Agency for International Development. Bureau for Science and Technology. Office of Research and University Relations (Sponsor)
(Ad Hoc Panel Meeting on Food Aid Projections for the Decade of the 1990s, Washington, DC, US, 6–7 Oct 1988)
[1988], x, 183p.: charts, statistical tables, En
9365052
**Also available from: National Academy Press, 2101 Constitution Ave. NW, Washington, DC 20418 USA*

The food aid projections and forecasting methodologies of six principal institutions engaged in food commodity analysis are compared in this workshop report. The institutions involved are the International Food Policy Research Institute (IFPRI), the United Nations Food and Agriculture Organization, the World Bank, Iowa State University’s Center for Agricultural Research and Development, the U.S. Department of Agriculture, and the International Institute of Applied Systems Analysis. With the exception of the IFPRI data, figures presented in the report were derived as rather simple projections or logical deductions. Analysis of the data yielded a considerable degree of consensus and led to the following principal findings. (1) Doubling of food aid (over current levels of about 10 million mt per year) would be necessary to meet projected market needs throughout the 1990’s. (2) Projected nutritional needs for the year 2000 are estimated at four times the current level. (3) There is no evidence that the greenhouse effect will exert a measurable influence on food production in the next decade. The report recommends that the development of forecasting methods which allow for the effects of natural disasters be made a research

FOOD AND NUTRITION

priority. It also states that Africa will continue to be the important focus of concern for food aid because of continuing conflict, locust plagues, cycles of drought and flood, and low economic growth combined with high rates of population growth.

063

PN-ABD-407

MF \$1.08/PC \$1.56

Status of traditional food preservation methods for selected Ghanaian foods

Pace, Ralphenia D.; Plahar, Wisdom A.; Lu, John Y.
Tuskegee University. School of Agriculture and Home Economics. Dept. of Home Economics
U.S. Agency for International Development. Bureau for Science and Technology. Office of Research and University Relations (Sponsor)
Food reviews international, v.5(1), 1989, 12p.: statistical tables, En
9365053

Ghana's warm and moist climate breeds insects, fungi, and bacteria which contribute to the deterioration of perishable foods, resulting in considerable postharvest food losses. This report describes Ghana's traditional food preservation techniques and assesses their impact on the nutrient quality of three kinds of fish (herring, trigger, and tilapia) and of cassava, the country's most perishable root crop. Dehydration, smoking, salting, and fermentation (used either singly or in combination) are the most common traditional processes. Use of these techniques on fish and cassava almost always lowers their moisture content and thereby increases nutrient concentration — a matter of great importance in a country such as Ghana, where nutrient deficiency diseases are prevalent. While fruits and vegetables are among the foods not traditionally preserved, Ghana's Food Research Institute has developed simple home canning and drying techniques for these foodstuffs, including solar drying of eggplant, okra, pepper, and spinach. Studies have also been carried out on the preservation of local fruits through the manufacture of jams, marmalades, fruit juices, and wines.

064

PN-ABD-806

MF \$2.16/PC \$18.59

Legislation and policies to support maternal and child nutrition

Nobbe, Elizabeth, comp.
American Public Health Association. International Health Programs (Sponsor)
Jun 1989, xvi, 98p. + attachment, En
Report no.6
9311010

Presenting data from 159 countries, this report surveys national legislation and policies that support maternal and child nutrition. Part 1 lists provisions enacted to support mothers in the workforce, including maternity leave policy, salary during leave, provisions for nurseries/creches, nursing breaks, and other considerations. Part 2 contains brief descriptions of nongovernmental and governmental policies that promote breastfeeding and support maternal and child nutrition. Part 3 documents steps taken at the national level to legislate the WHO/UNICEF International Code of Marketing of Breastmilk Substitutes. The most noticeable trend in activities to implement the WHO/UNICEF Code has been the number of countries that either have appointed committees to study the Code or have had government committees study the Code and draw up national codes that are pending before national legislatures. However, in some cases, governments have delayed action when the opportunity for lawmaking arrived. The report includes a 25-page bibliography and a chart highlighting legislation and programs.

065

PN-ABD-807
MF \$5.40/PC \$55.90

Informing food security policy in Mali: interactions between technology, institutions and market reform

Dione, Josue

National Consultative Commission for Monitoring and
Evaluation of Food Strategy
Michigan State University. Dept. of Agricultural
Economics

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

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

1989, xxi, 402p.: charts, statistical tables, En
Thesis (Ph.D.) — Michigan State University, 1989
625097088; 8311190

Coarse grains are the major staple food in Mali, making up 60% of total calorie intake. However, relatively few Malian farmers have been able to profit from coarse grain production. Using primary data collected over the period 10/85–10/87 from 190 farm households and 118 cereal wholesalers in two zones, this study aims to identify the major constraints to coarse grain production and marketing. It found that about 90% of coarse grain sales came from only 28% of sample farms; net sellers were generally large cotton farmers with full access to agricultural extension, credit, inputs, and markets. Some 43% of farm households were net purchasers of coarse grains. For both farmers and traders, capacity to invest in new technologies is constrained by direct head taxation and inadequate access to formal credit. Rigid head taxes also force food-deficit farmers to sell cereals early when prices are low and buy later at higher prices. For grain traders, investment is further constrained by uncertainties about coarse grain supply and demand conditions, public interventions on the cereals market, and market regulations. The study recom-

mends that rural development priorities and strategies be determined primarily according to their potential effects on the growth of total household income. Major research and policy efforts should also be made to reform fiscal and credit policies.



In Mali, nearly half of farm households are net purchasers of course grains, the primary staple food.

066

*PN-ABD-209

MF \$1.08/PC \$4.29

Nutrition and health programs in Latin America: targeting social expenditures

Pfeffermann, Guy P.; Griffin, Charles C.
Institute for Contemporary Studies. International Center
for Economic Growth

World Bank

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

1989, iv, 28p., En

9300092

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

The experiences of six Latin American countries in targeting nutrition and health programs are assessed in this report, with emphasis on the economic crisis period from the late 1970's to the mid-1980's. The various methods used by the countries are reviewed, including targeting by geographic location, age, health problems, and self-selection. The report also evaluates the different food programs implemented (general price supports, school lunch programs, and mother/infant supplements) as well as efforts to provide adequate public health interventions and curative care. Of the countries examined — Argentina, Brazil, Chile, Costa Rica, the Dominican Republic, and Mexico — Chile and Costa Rica stand out as the most successful in program targeting. Their achievements are attributed to the following: (1) avoidance of general food price subsidies, which create a heavy drain on the budget relative to the amount of aid targeted to the poor; and (2) wide provision of health insurance coverage, aggressive delivery of public health goods, and precise targeting of nutrition interventions by adding a sliding scale of fees or a self-selection mechanism that differentiates levels of need. As a result, both countries have experienced declines in mortality and fertility that far exceed what could be expected on the basis of income growth alone.

067

PN-ABD-800

MF \$1.08/PC \$6.76

Systems analysis of the Regi model BHU

Nicholas, David D.

Center for Human Services

Pakistan. Ministry of Health (Sponsor)

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

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

15 Aug 1989, 40p.: charts, En

Country report series: Pakistan

9365920

In 1986, Pakistan's North West Frontier Province established a model basic health unit (BHU) at Regi to improve community health care. This study assesses the effectiveness and acceptability of the BHU; individual chapters describe the clinic site, the study methodology, study findings, proceedings of a subsequent workshop on solution development, and recommended next steps. Although utilization is low, the Regi community has a generally high opinion of the BHU. Coverage by outreach workers is surprisingly high, such that 75% of the families know about and use oral rehydration solution and are familiar with symptoms of acute respiratory infection (ARI). Maternal/child care, diarrheal interventions, and vaccinations have all proven effective. Supervision, especially for the Expanded Program of Immunization (EPI), is strong. Nevertheless, several areas need to be improved: (1) fewer than half the women who gave birth during the past year received antenatal care, and 80% of the deliveries were attended by untrained helpers; (2) the target of 100% coverage in the EPI program has not been met; (3) clinical examination of children with diarrhea is sometimes cursory; (4) ARI protocols are not well developed; (5) malaria treatment is inadequate in terms of history-taking, examination, and the regularity with which blood slides are made; and (6) counseling is inadequate in several areas — child spacing, EPI, diarrhea, ARI, and malaria. Includes 34 figures as the principal medium for presenting research findings.

068

PN-ABD-801
MF \$1.08/PC \$10.66**Punjab task allocation study**

Nicholas, David D.

Center for Human Services

Pakistan. Ministry of Health (Sponsor)

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

19 Sep 1989, 39p. + attachments: charts, En

Country report series: Pakistan

9365920

The delivery of three child survival interventions in Punjab State, Pakistan — malaria treatment, diarrhea management, and vaccinations — was studied as a means of determining the use of the State's primary health care facilities — basic health units (BHU's) and rural health centers (RHC's) — and the effectiveness of community-level multi-purpose health workers (MPHW's). This report summarizes the methodology of the study, its major findings, and the proceedings of two workshops held to discuss study results, and uses 48 figures as the principal medium for presenting the research findings, the most important of which were as follows. (1) Half of the surveyed population use a government facility, predominantly a BHU, and are generally satisfied with the service received there. Many of the reasons given for not using BHU's (e.g., staff absenteeism) could be addressed with current resources. (2) Villagers are fairly well informed on the purpose and availability of vaccinations and the preparation of oral rehydration solution, but not on malaria management. Malaria treatment was also the weakest of the three areas studied, while diarrhea management and vaccinations were generally well handled. (3) Nearly 80% of the respondents were visited by an MPHW at one time, almost half of them during the past month. Except for malaria, the input of field supervisors had little impact on MPHW performance. The study concluded that the single factor explaining the relative popularity of some BHU's over others is the quality of services provided by MPHW's working in the immediate area. Facility utilization may, therefore, be increased through better management and closer supervision of outreach personnel.

069

PN-ABD-172
MF \$1.08/PC \$9.49**Malaria control in Ghana: plan of action, Accra, Ghana, 26 April 1989**

Lobel, Hans O.; Beier, John C.

Medical Service Corporation International

U.S. Dept. of Health and Human Services. Public Health
Service. Centers for Disease Control. Bureau of
EpidemiologyU.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. Honduras (Sponsor)26 Apr 1989, 30p. + 9 annexes: charts, statistical tables, En
9365948

In Ghana, malaria is the leading cause of death among children and accounts for more sick days at all ages than any other disease. With almost half of outpatient visits and child hospitalizations attributed to malaria, the problem has placed a heavy burden on the country's health delivery system. This report presents statistics on the disease and assesses the country's malaria control activities and policies. Despite the severity of the problem, the Government of Ghana did not consider malaria a priority until recently, when several cases of chloroquine-resistant *P. falciparum* malaria were reported. In response, the Ghanaian Ministry of Health has begun developing a national plan for malaria control. It is recommended that A.I.D. support the development and implementation of the program by including malaria control in its family planning and child survival activities. At this time, no other agency is providing any assistance to Ghana for malaria control. Objectives of A.I.D. activities should be to: (1) ensure effective malaria treatment in high-risk groups, (2) monitor the clinical and parasitological response to therapy and the patterns of severe illness and death, (3) survey knowledge, attitudes, and practices relating to malaria, (4) provide training and health education, and (5) facilitate operational research.

070

***PN-ABD-175**
MF \$3.24/PC \$31.59

Vector-borne disease control in humans through rice agroecosystem management: proceedings of the workshop on research and training needs in the field of integrated vector-borne disease control in riceland agroecosystems of developing countries, 9–14 March 1987

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

(Workshop on Research and Training Needs in the Field of Integrated Vector-Borne Disease Control in Riceland Agroecosystems of Developing Countries, Los Banos, PH, 9–14 Mar 1987)

1988, xviii, 237p.: ill., charts, statistical tables, En
936411102

**Also available from: International Rice Research Institute, P.O. Box 933, 1099 Manila, Philippines*

There is ample evidence to link ricefields to the transmission of vector-borne diseases, including malaria, schistosomiasis, and Japanese encephalitis. This report, stemming from a workshop held at the International Rice Research Institute, analyzes this linkage and discusses possible solutions. Part I gives an overview of the topic and outlines the impact of rice production on vector-borne diseases, the characteristics of tropical rice agroecosystems, and the epidemiology of ricefield-associated diseases. The impact of engineering, agronomical, and water management practices on disease vectors is assessed in Part II, which includes seven papers. Part III analyzes possible strategies for control of vector-borne diseases (six papers), while Part IV surveys various integrated vector control strategies (six papers). Thirteen research recommendations are given. These include: (1) assessing ricefield water-manipulation strategies to meet the twin goals of vector control and high yields; (2) defining the relationship between agricultural management strategies and public health problems; and (3) conducting sociological stud-

ies to find more effective means of motivating affected communities to integrate vector-borne disease control into their primary health care systems. The report also provides ten training recommendations, one of which is to prepare and distribute to extension trainers instructional materials on chemical and biological vector control measures and on water and environmental management.

071

PN-ABD-236
MF \$1.08/PC \$8.32

Community participation in water supply projects and ORT activities in Togo and Indonesia

Eng, Eugenia
Camp Dresser and McKee, Inc.
U.S. Agency for International Development, Bureau for Science and Technology, Office of Health (Sponsor)
Mar 1989, v, 63p.: statistical tables, En
WASH field report, no.260
9365942

Community participation in water supply projects achieves maximum impact when the communities are motivated to participate in a subsequent health-related project. This report describes case studies of two villages in Togo and two in Indonesia where oral rehydration therapy (ORT) activities were introduced after the villagers had participated in the construction, operation, and maintenance of improved water supply systems. Findings indicate that water projects stimulate community participation in subsequent ORT activities when: (1) the health benefits of an improved water supply and the social benefits of community involvement are fully understood; (2) the village development committee (VDC) plays a motivating role in recruiting and influencing participation, rather than an implementing role; (3) the VDC and the village chief have structured reporting mechanisms for supporting and supervising community volunteers; (4) power is not centered in the village chief but shared with subchiefs; (5) ethnic groups receive equal representation in activities and decisions; (6) project workers speak the local dialect; (7) the village population is small; (8) villages are physically accessible for site visits and the delivery of goods

and services; and (9) water quality is a problem more of health than of convenience. On the basis of these findings, the report presents recommendations for improving water and health policies and projects.

072

PN-ABD-275

MF \$1.08/PC \$7.54

Socioeconomic research of household sanitation and guidelines for program planners

Camp Dresser and McKee, Inc.
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Health (Sponsor)
Apr 1989, v, 56p., En
WASH field report, no.262
9365942

The specific ways in which social, cultural, and economic factors influence the management of children's excreta are assessed in this report. Also presented are guidelines for training extension agents in the collection of household-level data for use in designing hygiene education components of water supply and sanitation projects. Chapter I uses research conducted in rural Kenya and urban Djibouti to describe the sociocultural context of programs for management by low-income households of young children's excreta. Chapter II describes a household study of the handling and disposal of children's feces carried out in 1986 in two regions of Kwale District in Kenya. Chapter III provides a step-by-step outline of procedures for carrying out socioeconomic research on household water, sanitation, and hygiene conditions and practices. It details the community context of household-level research, outlines survey and interview research methodologies, and defines the process by which research findings are reviewed and applied to planning. Chapter IV

describes how the data collection process can be integrated with the planning process and how planners actually use the data they obtain. Lessons learned from two projects in Djibouti are highlighted.



The promotion of oral rehydration therapy can maximize the impact of an improved water supply system.

POPULATION

073

PN-ABD-396

MF \$3.24/PC \$35.36

Overview of A.I.D. population assistance: overall — FY 1988, Office of Population — FY 1988–FY 1989

U.S. Agency for International Development. Bureau for Science and Technology. Office of Population
Aug 1989, [19]p. + attachments : charts, statistical tables, En
Attachments: XN-ABD-396-A, XN-ABD-396-B

In fiscal year 1988, A.I.D. spent \$247 million for world-wide population and family planning assistance activities. Following a country-by-country summary of these activities, this report lists A.I.D.'s 156 population projects and their expenditures for fiscal years 1987–1990. The report then lists the 1,775 A.I.D. population subprojects that were active in fiscal years 1988–1989. For each country, the

Asia was the primary recipient of A.I.D. population funds, with \$100.8 million (43% of the total) provided for activities in 30 countries. Three nations — Bangladesh, Pakistan, and Egypt — accounted for half of the Asia/Near East Bureau's expenditures.

report identifies projects and subprojects according to the way in which they are funded (i.e., the Office of Population, buy-ins, or Mission/Region contracts). Asia was the primary recipient of A.I.D. population funds, with \$100.8 million (43% of the total) provided for activities in 30 countries. Three nations — Bangladesh, Pakistan, and Egypt — accounted for half of the Asia/Near East Bureau's expenditures. The Latin America/Caribbean region received \$56.1 million (24% of the total) for activities in 25 countries, while expenditures in Africa totaled \$52.6 million (23% of all) and were spread out over 45 countries. Four African nations — Kenya, Senegal, Nigeria, and Zimbabwe — accounted for 44% of the region's population expenditures. The remaining 10% of A.I.D. population funds supported research and other activities of world-wide significance.

074

PN-ABD-648

MF \$1.08/PC \$8.58

Agency for International Development, Office of Population sixth annual meeting of cooperating agencies: summary of proceedings

Lown, Marianne, ed.; Wexler, Dorothy B., ed.
Dual & Associates, Inc.
International Science and Technology Institute, Inc.
U.S. Agency for International Development. Bureau for Science and Technology. Office of Population
(Sponsor)
(Agency for International Development, Office of Population Annual Meeting of Cooperating Agencies, 6th, Rosslyn, VA, US, 10–12 Apr 1989)
25 Jul 1989, vii, 34p., En
Report no.89-039-986
9363024

An overview of A.I.D.'s population program, with special emphasis on the role of cooperating agencies, is provided in these summarized conference proceedings. Chapters I–III outline the current program as well as strategies for the next decade. Chapter IV highlights advances in contraceptive technology, covering the A.I.D. norethindron (NET) 90-day injectable, the *no scalpel* vasectomy technique, condoms, and NORPLANT and IUD's. Chapter V discusses the evaluation of population projects, while Chapter VI highlights progress related to AIDS, debt swapping for development, the population projects data base, and informed choice. Chapter VII examines A.I.D.'s partnership with the for-profit sector in family planning and includes synopses of three collaborative projects. Chapter VIII assesses efforts to target family planning at males and young people, and Chapter IX summarizes the population assistance efforts of several donors, including the World Bank, the U.N. Population Fund, the U.K.'s Overseas Development Administration, the MacArthur Foundation, and the Buffett Foundation. Chapter X summarizes conference discussions on country strategy planning, use of private sector management tools, breastfeeding for birthspacing, administrative issues, law reform for family planning service delivery, and NORPLANT implant strategy.

075

PN-ABD-798
MF \$1.08/PC \$6.89**Mobilizing the resources of the for-profit sector to support the expansion of family planning services in the developing world**

Logan, David; Friedman, Matthew; Lown, Marianne
Dual & Associates, Inc.
International Science and Technology Institute, Inc.
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Population
(Sponsor)
7 Dec 1989, v, 35p. + 2 appendices, En
9363024

Non-governmental family planning (FP) services provision is often referred to as private sector provision, a term which in fact encompasses both for-profit and non-profit efforts. This paper draws on A.I.D.'s experience with for-

profit projects in outlining a plan to enlist the varied resources of the for-profit sector to increase access to and transfer the costs of FP services in the developing world. Three categories of for-profit FP service providers are identified — companies which provide FP services to employees, organizations which offer FP services on a commercial basis, and voluntary contributions of FP services from private businesses. After a brief discussion of lessons gleaned from prior A.I.D. experience in for-profit FP projects (in areas such as project design, market segmentation, demand creation, service delivery, leveraging corporate resources, staffing/management, and sustainability), individual sections of the report examine (1) the goals and objectives of future pro-profit sector FP projects, (2) the overall strategy of future work in the for-profit sector, and (3) ways of tapping the potential of each of the three types of for-profit providers. The paper also briefly discusses the need to work with publicly owned businesses and organized labor to bring FP programs into the workplace. A discussion of how to draw multinationals into the process is included among the appendices.



Since the mid-1970's, A.I.D. has made increasing use of private sector resources to expand family planning services.

HUMAN SETTLEMENTS

076

PN-ABD-220
MF \$1.08/PC \$3.64

Tenure policy toward common property natural resources

Lawry, Steven

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)

Jul 1989, viii, 22p., En

LTC paper, no.134

9365301

Communal use of natural resources (e.g., grazing land, forests, and wildlife and biological resources) has led to environmental degradation in many areas of sub-Saharan Africa. Some analysts have placed primary blame on increased government control of these resources, which has undercut supposedly viable local management systems. This paper, on the other hand, argues that the rise of national authority is an economic and political response to the increasing inability of local institutions to manage communal resources effectively. Reasons for this include, inter alia, the weakness of economic incentives for individual participation in common property arrangements, the breakdown of the social relationships needed to sanction collective control of individual behavior, and the erosion of patron-client relationships and traditional authorities. At the same time, however, direct state regulation is expensive, generally ineffective, and often unfair to resource users. The report presents short-term recommendations for appropriate state and community roles in co-managing natural resources. For the long term, it is suggested that governments promote incentives for individual participation in communal management activities and conduct thorough reviews of the costs and benefits — social, economic, and political — of alternative tenure arrangements.

077

PN-ABD-418
MF \$1.08/PC \$4.42

Regularization of land title for informal communities in Cairo: an analysis and proposed approach

El-Messiri, Sawzan

Cooperative Housing Foundation

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

Aug 1989, 28p. + appendix: charts, En

2630066

An A.I.D. project initiated in 1980 to upgrade informal communities in Helwan, a suburb of Cairo, Egypt, was successful in most respects except in its efforts to provide squatters with regularized land title. Since that time, however, significant changes have been made in the country's legal, policy, and institutional environment which may have improved the prospects for achieving this goal. These changes are described and analyzed in this report in terms of their impact on the land tenure system. Case studies of two other Egyptian land tenure projects — one in Nassiriya (the largest unplanned settlement in Aswan), the other in Ismailia — are also presented. Although the legal and institutional framework for a national land tenure program has been established, the process still faces several major constraints in the A.I.D. project areas. The Cairo Governorate's intention to use the national tenure plan to raise revenues is at odds with the informal communities' major concern of affordability. Moreover, attempts to motivate area dwellers to pay the cost of development by legalizing land title will have a limited effect, since the infrastructure and improvements have already been constructed. Another obstacle is the lack of institutional capacity to cope with the volume of encroachment in Cairo. The final section of the report outlines a possible course of action for future upgrading programs.

078

PN-ABD-417
MF \$1.08/PC \$8.84

Nepal credit mechanisms for financing low-income housing

Cooperative Housing Foundation

Nepal. Ministry of Housing and Physical Planning
(Sponsor)

U.S. Agency for International Development. Bureau for
Asia and Near East. Nepal (Sponsor)
[1989], 65p., En

As a result of Nepal's high population growth rate, housing has become a priority of the nation's economic development policy. This study addresses the need to facilitate home construction and improvement through the development of community-based housing finance systems. The report analyzes Nepal's existing credit mechanisms, identifies key housing issues, describes financing options, and provides recommendations for project development and training. Currently, Nepal has neither specialized housing finance institutions nor a significant number of community-based thrift and credit mechanisms. The only existing credit sources are the limited shelter loans made by the two major commercial banks and the Agricultural Development Bank of Nepal and various informal financing mechanisms. High demand for housing credit is evident in the estimated increase of Nepalese households by 100,000 in 1988/89. In addition, there is a substantial need for home improvement, since only half of urban houses and even fewer rural houses have toilet facilities, private water supply, electricity, or permanent building materials. The proposed strategy is to expand Nepal's existing funding mechanisms to establish a country-wide network of viable, self-reliant, community-based organizations for housing finance purposes.

079

PN-ABD-419
MF \$1.08/PC \$8.32

Financing housing through savings and credit cooperative societies in Kenya

Cooperative Housing Foundation

Matrix Development Consultants

U.S. Agency for International Development. Bureau for
Africa. Regional Housing and Urban Development Office
(Sponsor)

U.S. Agency for International Development. Bureau for
Africa. Kenya (Sponsor) Revised ed.
Feb 1989, [44]p. + 4 annexes: charts, statistical tables, En
6150225

The potential for Kenya's savings and credit cooperative societies (SACCO's) to extend housing credit to informal sector beneficiaries and low-income wage earners is examined in this study. The present capabilities of the entire cooperative financial sector and that of the local authorities vis-a-vis the delivery of housing and related services are also assessed, together with their linkages to other financial institutions within the formal private sector. The growth of SACCO's in Kenya has been rapid, but membership typically has been tied to formal sector employment, effectively limiting lending to persons who, though they may live in informal housing, work in the formal employment structure. However, Government of Kenya policy now encourages the establishment of SACCO's serving the informal sector, and activities in this area are expected to expand in the future. The study recommends that a \$3 million pilot Housing Development Revolving Fund (HDRF) be created to expand SACCO activities and build their financial management expertise. The HDRF would lend individual SACCO members between Sh 20,000-60,000, with repayment periods of 3 to 7 years at 12% annual interest. The fund would finance approximately 1,700 individual loans at an average of Sh 30,000 each, and would be used to leverage members' savings. To ensure proper management, the project would be limited to an estimated 60 SACCO's.

ENVIRONMENT AND NATURAL RESOURCES

080

*PN-ABD-212
MF \$1.08/PC \$4.94

Deforestation and government policy

Gillis, Malcolm; Repetto, Robert
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, 34p., En
Occasional papers / International Center for Economic
Growth, no.8
9300092

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

Natural tropical forests are rapidly shrinking in both size and quality, with severe consequences for the entire planet. This paper explores the causes of deforestation in Third World countries, with special emphasis on waste-promoting government policies. Six major problems are identified: (1) undervaluation of forest assets by both governments and international institutions, (2) overestimation of benefits and underestimation of costs of forest exploitation due to overly optimistic expectations of the rate and extent of regeneration, (3) development policies based on inadequate knowledge of ecological limitations and economic consequences, (4) exploitation of forests to resolve sociopolitical conflicts (e.g., in many countries migration to forested regions has been seen as a means of relieving overcrowding and landlessness in settled agricultural regions), (5) insufficient commitment of funds and research efforts to forest ecology and management, and (6) preemption of local traditions of forest management, which has made local communities unable, and less willing, to prevent destructive encroachment. The paper also suggests policy reforms designed to lessen deforestation problems and ways in which international development agencies and governments of industrial nations can help.

081

PN-ABD-318
MF \$1.08/PC \$1.56

International space year 1992: developing country perspectives

University of New Mexico. Technology Application Center
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Forestry, Environ-
ment and Natural Resources (Sponsor)
[1989], 10p., En
PDC-0000-I-01-7071-00

The International Space Year (ISY), designated for 1992, will aim to foster international scientific cooperation and maximize the effectiveness of space-related activities worldwide. For the Third World, ISY is expected to have its greatest impact in encouraging satellite remote sensing for the purposes of economic development and natural resource management. This report presents recommendations for and attitudes about ISY from remote sensing organizations in five developing countries — Thailand, Peru, Egypt, Jordan, and Kenya. These organizations, some of which are leaders in the field, showed enthusiasm for ISY, but would participate only if practical uses of space are stressed and if they can play a truly active role in ISY programs. There was a widespread perception that the United States had abdicated its international preeminence in remote sensing, but also agreement that strong U.S. leadership in promoting remote sensing during the ISY could reestablish this status. Finally, the organizations emphasized that planning for ISY activities in the developing world must begin immediately and should include: workshops in economic development and natural resource applications of remote sensing; multi-year regional remote sensing studies; establishment of regional remote sensing societies; and publication of newsletters and directories.

ENVIRONMENT AND NATURAL RESOURCES

082

PN-ABD-124

MF \$2.16/PC \$25.35

Willingness to pay for water in Newala District, Tanzania: strategies for cost recovery

Whittington, Dale; Mujwahuzi, Mark; et al.
Camp Dresser and McKee, Inc.
U.S. Agency for International Development. Bureau for Science and Technology. Office of Health (Sponsor)
U.S. Agency for International Development. Bureau for Africa. Tanzania (Sponsor)
Jun 1989, x, 205p.: statistical tables, En
WASH field report, no.246
9365942

When Tanzania's central government periodically runs out of funds to operate village water systems, women in the southern Newala District are forced to travel 10–20 miles a day in search of water for their families. Households in this area were surveyed to determine their willingness to ensure a more reliable water supply by paying maintenance and operation costs themselves. Respondents were also asked how much they could afford to pay and whether they would prefer a pay-by-the-bucket or a flat monthly fee system of cost recovery. Findings indicate that households are willing to incur substantial capital expenditures to meet their water needs. In general, women are willing to pay about Tsh 7 per month more than males and literates are ready to pay about Tsh 10 per month more than illiterates. Preference for a pay-by-the-bucket system over a flat monthly fee was indicated. Although Newala residents cannot currently afford to pay for the entire operation and maintenance of either system, the cost of doing so—about \$28 per year for each family—is not large by international standards and the effort would free up about six months of a woman's time, which could then be contributed to both economic and child development. It is recommended that a limited cost-recovery system be established now in order to facilitate sustainable economic development in the long term.

083

PN-ABD-804

MF \$3.24/PC \$31.98

Programme al Ghait — Morocco winter snowpack augmentation project

Matthews, D.A.; Dennis, A.S.; et al.
U.S. Dept. of the Interior. Bureau of Reclamation
U.S. Agency for International Development. Bureau for Asia and Near East. Morocco (Sponsor)
Sep 1989, xxxi, 236p.: ill., charts, maps, statistical tables, En
Report no. R-89-14
6080190

In response to a severe, prolonged drought, A.I.D. and the Government of Morocco initiated a joint effort in 1983 to utilize weather modification techniques to augment rainfall. The project uses silver iodide as a seeding agent to increase the precipitation efficiency of cold clouds in the Central High Atlas Mountains. The silver iodide is released from aircraft, ground-based seeding generators, or both during periods when seedable clouds exist in the target area. Field operations conducted from 1984 to 1989 resulted in the seeding of 15–25 storm events during each season, with a total of 144 seeded days during the 5 years. This report evaluates the project in terms of its scientific design; institutional development and infrastructure; technology transfer; cloud seeding operations; scientific, hydrologic, and economic studies; and evaluation. The contributions of the Moroccan and U.S. governments are also assessed. While the project has made significant achievements in all areas, a statistical analysis of the effect of the program on streamflow is not yet possible. The first 2.5 years of the project must be eliminated from analysis due to low seeding efficiency, leaving only a 1.5-year sample—far less than the 6 years necessary for an accurate evaluation.

084

PN-ABD-645

MF \$4.32/PC \$38.61

Social sciences in Asian forestry curricula: readings from the literature of social sciences in forestry

Stoney, Carol; Gallup, Cristin E.; et al.
Yale University. School of Forestry and Environmental Studies. Tropical Resources Institute
Winrock International
U.S. Agency for International Development. Bureau for Science and Technology. Office of Rural and Institutional Development (Sponsor)
1989, ii, 283p., En
9365547

The past accomplishments and future potential of the social sciences in Asian forestry are illustrated in this sampling of research being conducted throughout the region and across disciplines. Included are readings in anthropology (15), economics (12), political science (16), and sociology (19). In addition to research with general applicability, the collection includes information on specific activities in China, Indonesia, Nepal, the Pacific Islands, the Philippines, Thailand, Bangladesh, India, and Pakistan. In selecting the excerpts, special attention was given to in-house reports and studies not found in other compilations. Each excerpt is categorized by its chief application; i.e., whether it illustrates theory and concepts, methods and measures, or technology transfer. The volume is arranged by discipline, and by country within each discipline. The excerpts demonstrate the existence of sound, usable studies which can provide valuable information to farm and community forestry planners, practitioners, and evaluators, as well as other social and natural scientists.

085

PN-ABD-659

MF \$2.16/PC \$15.21

Proceedings of the international seminar on Pakistan forest policy

Pakistan. Ministry of Food, Agriculture and Cooperatives
Pakistan. Office of the Inspector General of Forests
U.S. Agency for International Development. Bureau for Asia and Near East. Pakistan
(International Seminar on Pakistan Forest Policy, Karachi, PK, 6-8 Mar 1989)
1989, iv, 106p.: ill., En

Although Pakistan's current forest policies have led to some achievements in the areas of planning, classification, plantations, training, and research, they have not been successful in bringing public and private forests under proper management. In March, 1989, the Inspector General of Forests hosted an international seminar to discuss elements of a new national forest policy for Pakistan. Policy papers are presented, in whole or summary form, which cover the following topics: the role of policy in national forest management planning; the U.S. Bureau of Land Management's rangeland management process and policies; people's involvement in forest management in an integrated rural development project undertaken jointly by the Governments of Pakistan and Switzerland in North West Frontier Province; forests and forest legislation in the Federal Republic of Germany since 1850; and an overview of forestry policies in Europe, Asia, the Near East, Africa, and Latin America. The report also summarizes working group sessions on socioeconomic conditions, intersectorial linkages, forestry-related legislation, future objectives and direction, and financial and political support, along with the policy recommendations that emerged from these sessions.

086

*PN-ABD-793
MF \$3.24/PC \$35.88

Agroforestry literature: a selected bibliography

Labelle, R., comp.; Majisu, L., comp.; Munyua, H., comp.
International Council for Research in Agroforestry
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Forestry, Environ-
ment and Natural Resources (Sponsor)
1988, vi, 269p., En

**Also available from: International Council for
Research in Agroforestry, P.O. Box 30677,
Nairobi, Kenya*

Intended as an introduction to essential readings on agroforestry, this annotated bibliography lists 531 references dating from the mid-1970's to early 1986. Entries are listed sequentially by its master file number in the ICRAF collection and include: ICRAF accession number; author's name and affiliation; English title of the document, as well as the original language title (if other); the source of the document, including date of publication, volume, and issue number; the language of the document; the pertinent geographic location; species and subject descriptors; and a brief abstract. Author, species, subject, and geographic indexes are provided.

087

*PN-ABD-794
MF \$2.16/PC \$15.47

Agroforestry literature: a selected bibliography on sub-Saharan Africa

Munyua, H., comp.; Bondole, B.M., comp.; Majisu, L.,
comp.
International Council for Research in Agroforestry
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Forestry, Environ-
ment and Natural Resources (Sponsor)
1989, ix, 109p., En

**Also available from: International Council for
Research in Agroforestry, P.O. Box 30677,
Nairobi, Kenya*

Developed to serve as an introduction to the literature on agroforestry in sub-Saharan Africa, this annotated bibliography contains 244 references covering the period from 1961 to early 1988. Listed sequentially by a master file number, each entry includes: ICRAF accession number; individual and corporate author; title in English and original language (if other); document's source, date of publication, volume, and issue number; geographic location; descriptors; and a brief abstract. Contains author, species, subject, and geographic indexes.



Degraded sandy soils like these in Senegal have been the focus of recent agroforestry activities.

088

*PN-ABD-795

MF \$2.16/PC \$24.18

Technology monitoring and evaluation in agroforestry projects: an annotated bibliography

Muller, E.U., comp.; Scherr, S.J., comp.
International Council for Research in Agroforestry
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Forestry, Environ-
ment and Natural Resources (Sponsor)

1989, 191p., En

**Also available from: International Council for
Research in Agroforestry, P.O. Box 30677,
Nairobi, Kenya*

Surveying the methods available for technology monitoring and evaluation (M&E) in agroforestry, this annotated bibliography provides 202 references divided into three categories. Part 1 cites materials on M&E methods from 85 field projects involving agroforestry. Part 2 covers guidelines on agroforestry M&E; most citations focus on conceptual issues and general approaches to M&E, while others are case studies of specific methods. Part 3 cites publications on M&E in other types of rural development projects, such as agriculture or farming systems research. Entries are listed sequentially by their master file number in the ICRAF collection and include, inter alia: author; date of publication; English title and title in original language (if other); the document's source, including volume and issue number and publisher; geographic location; the language of the document; a brief abstract; and five categories of descriptors (general, technology planning/design, technology evaluation, project impact and technology). The bibliography contains a larger number of references from Africa (55%) than Asia (30%) and Latin America (15%), with Kenya accounting for nearly half of the African entries. Indexes are provided for author, country, and for each of the five categories of descriptors. Appendixes include lists of projects and acronyms and a glossary.

089

*PN-ABD-796

MF \$2.16/PC \$13.65

Multipurpose trees: selection and testing for agroforestry — multipurpose trees and shrubs for specified agroforestry technologies and land-use systems, the ICRAF approach

Huxley, Peter A., ed.; Westley, Sidney B., ed.
International Council for Research in Agroforestry
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Forestry, Environ-
ment and Natural Resources (Sponsor)

(ICRAF's Anniversary Conference and Technical
Seminar, 10th, Nairobi, KE, 1989)
1989, 117p.: ill., charts, En

**Also available from: International Council for
Research in Agroforestry, P.O. Box 30677, Nairobi,
Kenya*

The ICRAF approach to the selection and testing of multipurpose tree species (MPTS) for use in agroforestry interventions was the topic of a two-day technical seminar in 1987. Texts of the nine papers delivered at the seminar and summaries of the resulting discussions are contained in this report. The material is presented in four sections. Section 1 includes an overview of the diagnosis and design (D&D) methodology used by ICRAF to match agroforestry technologies with specific land-use problems, along with a case study describing the application of the D&D method in Zambia upland plateau region. Section 2 begins with a description of how ICRAF uses a specially designed data base to match candidate MPTS with specific agroforestry technologies and land-use systems, and concludes with two illustrative case studies from Burundi. The principal paper in Section 3 describes how ICRAF uses the D&D method to identify research problems, set research priorities, and apply results; the planning and implementation stages of research formulation are detailed in two case studies from Cameroon. Finally, Section 4, on ICRAF's approach to designing field experiments for MPTS research, discusses ways of dealing with the complexities of experimental situations.

090

***PN-ABD-797**
MF \$6.48/PC \$68.64

Meteorology and agroforestry: proceedings of an international workshop on the application of meteorology to agroforestry systems planning and management, Nairobi 9–13 February 1987

International Council for Research in Agroforestry
World Meteorological Organization
U.N. Environment Programme
U.S. Agency for International Development. Bureau for Science and Technology. Office of Forestry, Environment and Natural Resources (Sponsor)
(International Workshop on the Application of Meteorology to Agroforestry Systems Planning and Management, Nairobi, KE, 9–13 Feb 1987)
1989, iv, 546p.: charts, maps, statistical tables, En
**Also available from: International Council for Research in Agroforestry, P.O. Box 30677, Nairobi, Kenya*

The role of the atmospheric sciences in the development and practice of agroforestry is the focus of the 50 papers contained in these conference proceedings. The first three papers provide an introduction to the relationship between the environment and agroforestry. The next six papers present information basic to understanding how meteorology and climatology can be used in agroforestry systems. The next 15, fully one-third of the book, tell how meteorology and climatology have been integrated into agroforestry practice around the world or, in many cases, how they could or should be so integrated. Following are nine technical papers that discuss ways that the environment can be measured, how experiments can be designed, and how they can be analyzed to elicit useful information. Nine more papers give the results of various agroforestry experiments, most of them conducted by scientists from the International Council for Research in Agroforestry. Three papers that give the results of research on interrelationships among agroforestry, climate, and animals are then presented, as are three experiments involving windbreaks. A major theme emerging from the proceedings is that there

is very little hard information on the contribution of the atmospheric sciences to agroforestry. Most basic information comes from experiments and measurements in the temperate zone and while some of this may be applicable in tropical regions, much of it is not. Clearly, a good deal remains to be done in adapting existing knowledge to the practice of agroforestry in tropical regions. (Author abstract, modified)

091

PN-ABD-829
MF \$1.08/PC \$6.50

Agroforestry : tenure and incentives

Bruce, John W.; Fortmann, Louise
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)
Jul 1989, v, 46p., En
LTC paper, no.135
Bibliography: p.35–46
9365301

The effect of tree and land tenure on farmers' incentives to plant trees is examined in this paper, and lessons for agroforestry project planning are drawn. The validity of the generally accepted "security of tenure" model, which assumes that without land tenure security tree-planting will be discouraged, is examined in relation to three different situations. (1) Analysis of tree tenure on household agricultural holdings finds the issue more complicated than previously thought. Trees can be an object of property rights separable from the land, like water and mineral rights. In addition, tree-planting can sometimes actually increase security in land tenure. Gender issues are also relevant, since the household is not necessarily under single management (the male's). (2) In regard to tree tenure in communal areas (e.g., village woodlots), the report details the deforestation that results when states refuse to recognize common areas, instead conferring land rights on the first person to "clear the land." Problems in developing institutional mechanisms for managing common property are also examined. (3) Analysis of tree tenure on state-managed reserves focuses on conflicts

FORESTRY

between the state and local communities over control of forests and on alternative systems, such as the “taungya” system in Asia, in which farmers were temporarily allocated areas for both tree-planting and subsistence cropping. Overall, it is concluded that while tree tenure does affect incentives, its importance varies dramatically from

case to case, so that the mere elimination of tenure constraints will accomplish little. The final section of the paper suggests procedures to assess tree and tenure relationships in agroforestry project planning. A sample field questionnaire is included.



Lack of land tenure security may contribute to improper management of forest resources.

092

PN-ABD-619
MF \$3.24/PC \$27.56

Prefeasibility study: oil shale utilization for power production in the Hashemite Kingdom of Jordan — executive summary and study report

Bechtel National Inc.

Pyropower Corp.

U.S. Dept. of Energy. Oak Ridge National Laboratory
Jordan. Ministry of Energy and Mineral Resources
(Sponsor)

Jordan Electricity Authority (Sponsor)

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

U.S. Agency for International Development. Bureau for
Science and Technology. Office of Energy (Sponsor)
May 1989, v.p.: ill., En

Report no.89-02

Prefeasibility study: oil shale utilization for power production in the Hashemite Kingdom of Jordan, v.1 v.2:
PN-ABD-620, v.3.: PN-ABD-621, v.4: PN-ABD-622,
v.5: PN-ABD-623, v.6: PN-ABD-624
9365724

In Jordan, a country wholly dependent on fuel imports, oil shale is the only major proven indigenous energy source. This prefeasibility study assesses the technical and economic prospects for an oil shale power generation project based on circulating-fluidized bed combustion technology in Jordan. The project would include facilities for: a mine and oil shale processing plant to supply raw oil shale fuel to a Pyroflow boiler plant, a steam turbine electric generation plant with necessary auxiliary equipment, a spent shale ash and overburden disposal system, and necessary on-site and off-site infrastructure. Conceptual designs are presented for three sizes of operations — a 20-MW demonstration plant, a 50-MW prototype plant, and a 400-MW commercial-scale plant. Findings indicate that a commercial-scale plant would be technically and economically viable, providing favorable 25-year cumulative net benefits compared to a new power project fueled with imported coal. No environmental constraints to such a project were identified. The final section of the report

outlines an action plan for implementing the project. Volumes II–VI contain 12 appendices on various technical and design aspects of the project.

093

PN-ABD-858
MF \$2.16/PC \$19.11

Energy conservation investment, decisionmaking in developing countries: a review of project implementation in industry — final report

RCG / Hagler, Bailly, Inc.

U.S. Agency for International Development. Bureau for
Science and Technology. Office of Energy (Sponsor)
Dec 1989, v.p.: charts, En
Report no.89-16
9365728

Despite recent efforts in a number of developing countries to promote energy conservation (EC) and efficiency, only a fraction of EC potential has been captured, especially for projects that require significant investments. This document analyzes EC efforts in 11 countries where energy audit and/or feasibility study programs have been carried out (Bangladesh, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Jordan, Pakistan, Panama, the Philippines, and Sri Lanka), covering some 1,500 EC projects involving 242 industrial companies. Cost and length of payback seem to be the determining factors for companies considering EC measures; no-cost or low-cost projects with paybacks of less than a year (such as power factor improvement projects) had the highest rate of implementation, while expensive, complicated projects (e.g., cogeneration or fuel substitution projects) were most often rejected. The document concludes, however, that the rate of implementation of EC programs has been quite high, and recommends that inexpensive, short-term projects be featured in future EC programs and increased levels of TA and financial assistance be made available to companies implementing long-term EC measures.

EDUCATION

094

*PN-ABD-174

MF \$3.24/PC \$28.73

Guide to creating self-learning materials

Minnick, Dan R.

International Rice Research Institute

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

1989, 219p.: ill., charts, En

Second ed.

936411102

**Also available from: International Rice Research Institute, P.O. Box 933, 1099 Manila, Philippines*

To assist trainers and communicators in transferring knowledge and information on rice, this guide describes the concepts, principles, and processes used to develop self-study training materials. Part I discusses theories and concepts related to autotutorial instruction as a learning method. Chapter 1 introduces the basics of communication and presents a communication model that helps to explain what happens during information transfer, while chapter 2 contains a brief history of self-study theory, the evolution, and design of this methodology. Chapter 3 continues with a more detailed discussion of adult education. Chapter 4 highlights both old concepts of learning and the theory of whole brain learning, and chapter 5 explains various learning styles. Part II is task-oriented. Chapters 6 through 11 explain how to create autotutorial packages, covering performance and instructional objectives, script, visuals, and tape development, feedback and evaluation, and typical problems and shortcuts. Chapter 12 discusses how autotutorial programs are to be managed. The guide itself is designed for self-study. Each chapter contains objectives, topics to learn, and self-evaluation exercises to measure progress. Lessons are written in a conversational tone and contain drawings and written information to be read in sequence. (Author abstract, modified)

095

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Agricultural higher education in Brazil

Gross, Daniel R.

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

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A.I.D. working paper, no.127

From 1963 to 1978, A.I.D. provided assistance for agricultural higher education in Brazil. From 1963 to 1973, four agricultural colleges received technical support, equipment, library materials, and advanced U.S. training with the primary purpose of establishing postgraduate programs in agriculture. In 1973, the program's focus was broadened to include more institutions and to encourage Brazilian universities to collaborate with each other. A.I.D.'s efforts succeeded in creating viable, sustainable postgraduate programs, with more than 3,600 Master's degrees and 200 Ph.D.'s awarded, and in establishing research activities in many agricultural colleges. Graduates went on to found a number of additional undergraduate and graduate programs in over 50 universities throughout Brazil. Yet the program's effectiveness is increasingly being questioned. Rapid enrollment growth, causing overcrowded classes and ill-prepared students, has eroded some of the advances originally made. The establishment of the Brazilian Corporation for Agricultural Research (EMBRAPA) in 1972 has also hindered the program, as the research center has drawn personnel and resources away from the universities. Finally, economic and political turbulence over the past decade has left long-term advances in doubt. Public funding of salaries, political repression, and political squabbles within the universities have led many scientists to leave the programs. Continuance of this situation could seriously curtail the role of the universities in the development of science and technology in Brazil. (Author abstract, modified)

096

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MF \$1.08/PC \$6.50

Does schooling make a better farmer?: schooling and agricultural productivity in Burundi

Eisemon, Thomas Owen; Prouty, Robert; Schwille, John
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Development

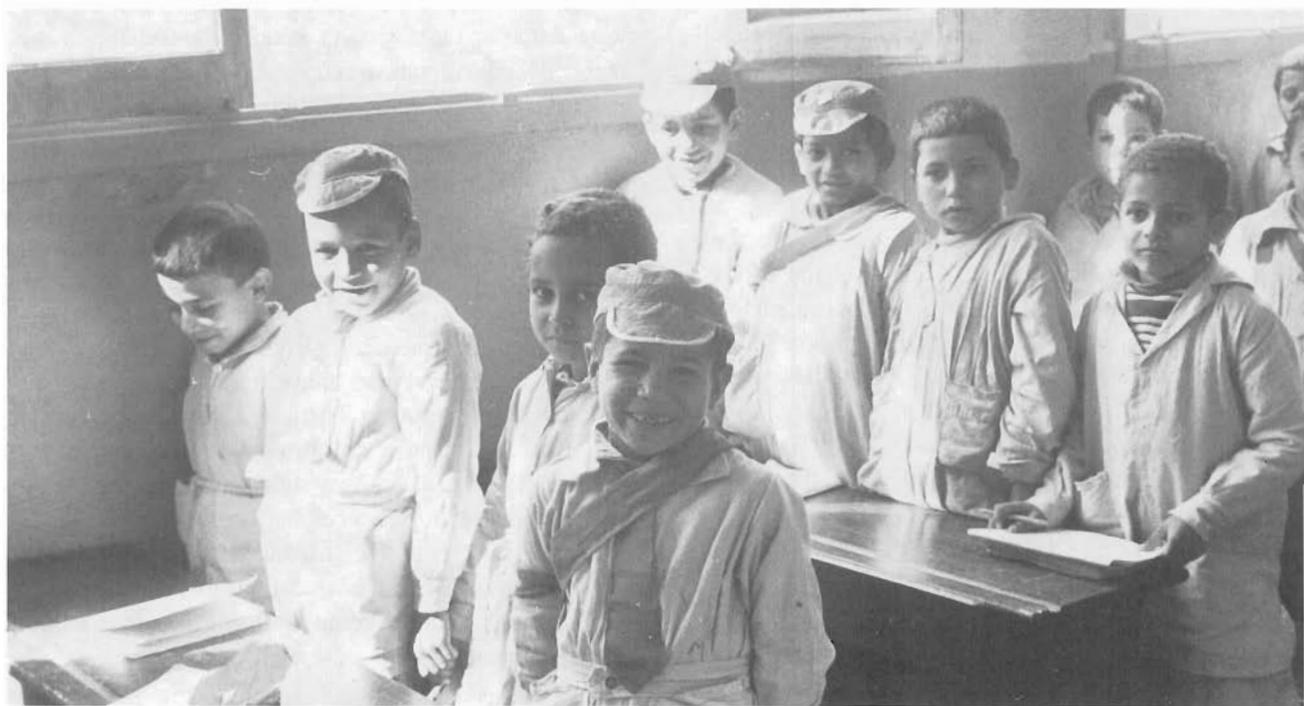
Harvard University. Harvard Graduate School of
Education

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

1 May 1989, 48p.: statistical tables, En
9365824

Does schooling increase the productivity of Burundi farmers? To answer this question, this paper examines agricultural instruction in primary schools in Burundi, and assesses the impact that the teaching has had on the way school leavers think about and practice agriculture. After reviewing colonial strategies and post-independence reforms (particularly those made in 1973), the study de-

scribes the teaching of agriculture and science in primary schools, the use of school gardens for practical training, and the effects that enrollment expansion and selection for secondary education have had on student instruction. Findings are presented from surveys of sixth grade students in three primary schools and of farmers living in the school catchment areas. While schooling is found to have a modest impact on agricultural productivity (especially for food crops), research suggests that schooling does little more than reinforce what students learn outside the classroom. Therefore, to improve this situation, the paper argues that changes are needed in educational policy as well as in instructional methods. Key recommendations include: (1) linking the functions of agricultural education and extension; (2) integrating the teaching of science, agriculture, and nutrition; (3) expanding the use of Kirundi, the vernacular language, as a medium of instruction; and (4) integrating agricultural subjects into the *concours national*, the test given at the end of the primary cycle for admission into secondary schools. Farmers throughout Africa are being increasingly exposed to new agricultural technologies; primary schools should recognize this fact by giving students a basic knowledge of the natural world to help them assimilate modern agricultural practices.



*Agricultural education at the primary level provides a basic foundation
for assimilating modern agricultural practices.*

TECHNOLOGY, INDUSTRY, AND COMMUNICATION

097 ***PN-ABC-601** **098** **PN-ABC-834**
MF \$1.08/PC \$5.07 **MF \$1.08/PC \$4.68**

GESS, a multiple commodity supply and demand model: user's manual

Trapp, James N.
Abt Associates, Inc.
Robert R. Nathan Associates, Inc.
Abel, Daft & Earley, Inc.
Oklahoma State University. Dept. of Agricultural Economics
U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture (Sponsor)
Aug 1988, 36p.: charts, En
Document also available on computer disk which is available from Abt Associates
9364084

**Also available from: Abt Associates Inc.,
55 Wheeler St., Cambridge, MA 02138 USA*

Sound agricultural policy requires a means of estimating the impacts of various taxes and subsidies upon production and consumption levels, farm income, government costs and revenues, the balance of trade, etc. The Generalized Econometric Spreadsheet Simulation (GESS) model has been specifically designed to aid in answering such policy questions. The model essentially consists in editing well-documented tables of input information. A basic knowledge of elasticities and supply and demand theory is helpful in understanding and interpreting the results of the various simulated policy options. Editing of the policy input tables to consider new scenarios requires only a few minutes, thus giving the model a quick response capability that is often critical in policy analysis. The model is user-friendly; an individual with no prior computer experience can be trained to operate it in less than one day. The main body of this document provides a complete description of the GESS modeling concept and a review of the economic theory on which it is based. Appendix A provides a detailed discussion of how to develop a prototype GESS model using LOTUS 1-2-3. Instructions and a sample set of data and parameters are provided to enable the user to program a three-commodity GESS model.

Industrialization prospects for Swaziland and the experience of newly industrialized countries

Hood, Ron
International Science and Technology Institute, Inc.
Center for Development Technology
U.S. Agency for International Development. Bureau for Program and Policy Coordination. Office of Economic Affairs (Sponsor)
U.S. Agency for International Development. Bureau for Africa. Swaziland (Sponsor)
Jun 1989, 33p., En
9300095

With a small internal market and few prospects to expand traditional economic activities, Swaziland must look to new industries to create the jobs needed to keep real income growing. This paper analyzes Swaziland's potential for industrialization by comparing its situation to those of four newly industrialized countries — Mauritius, South Korea, Taiwan, and Hong Kong — at the time when they were entering rapid growth periods. According to the report, Swaziland compares favorably to the four countries in terms of socioeconomic stability, cheap labor, climate for foreign investment, trade advantages, savings rates, and general macroeconomic policy. There is clear potential for increased employment through the manufacturing and export of labor-intensive consumer goods, and this process has already begun with investments in footwear, textiles, garments, furniture, and other products. The current level of investment is high (about 30% of GDP), and South African investors may increasingly locate in Swaziland to circumvent sanctions against their country. However, Swaziland is well behind the four comparison countries in terms of property rights, health, management skills, resident entrepreneurial skills, government administration, and degree of foreign ownership. The final section of the report makes recommendations for A.I.D.'s role in helping Swaziland overcome these constraints to industrial development.

099

*PN-ABD-120

MF \$1.08/PC \$4.55

Conceptual framework for studying the links between agricultural research and technology transfer in developing countries

Kaimowitz, David; Snyder, Monteze; Engel, Paul
International Service for National Agricultural Research
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Agriculture
(Sponsor)

May 1989, vii, 30p., En

Linkages theme paper, no.1

936411113

**Also available from: International Service for National
Agricultural Research, P.O. Box 93375, 2509 AJ,
The Hague, Netherlands*

Though weak linkages between agricultural research and extension institutions are frequently cited as a major obstacle to agricultural development in the Third World, no set of generally applicable recommendations for promoting such linkages exist. This paper presents a conceptual framework to help leaders of research and extension institutions identify (and to some extent control) the mechanisms which can effect the desired linkages and the contextual factors which influence these mechanisms. Brief opening sections define the key concepts of the framework and the criteria for successful linkages. The bulk of the report consists of analyses of the political, technical, and institutional factors affecting research-extension linkages. A final summary section recommends that research and extension managers: (1) pay special attention to technology consolidation and production; (2) recognize that already established technologies require different links than technologies still in the process of development; (3) take maximum advantage of their control over personnel policies; (4) address problems arising from the differences between researchers and extensionists in regard to training, experience, status, and physical location; (5) employ a variety of organizational groupings and linkage mechanisms; (6) realize that high levels of integration can be achieved by interdependence, domain correspondence, ideological consensus, competence, and the capacity to deliver on agreements.

100

*PN-ABD-242

MF \$1.08/PC \$4.16

Constructing a punch press for small-scale manufacture of crossflow turbines

Bielenberg, Carl N.; Richman, Arleen, ed.;

Swartzendruber, J.F., ed.

Appropriate Technology International

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

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9365428

**Also available from: Appropriate Technology
International, 1331 H Street, NW, Washington, DC
20005 USA*

Access to sophisticated metal processing technologies is a problem in most areas of the Third World. To produce good quality metal products in these regions, techniques need to be adapted to existing equipment and available raw materials. This paper describes a punch press which enables metal processors in eastern Zaire to produce commercially viable, hydropowered grain mills. The press is a refinement of a well-known, traditional technology, used mostly in machinery driven by air or hydraulic pressure, to allow for use in small-scale manufacturing. Initial surveys indicate that the grain mills give poor people access to a milling capacity not otherwise available. Reportedly, women now use the time they save by having their corn or cassava milled to market extra produce or to engage in other income-generating activities. Included in the paper are chapters on: (1) punch and die applications to small-scale manufacture; (2) design and construction of punches, dies, and presses in small workshops; (3) use of a punch press in small-scale manufacture of cross-flow turbines; (4) design and construction of a punch press for slotting turbine runner disks; and (5) the impact of the punch press on turbine manufacture in eastern Zaire. This technical description, not meant to be a step by step manual for the production and use of a punch press, is designed to help promote discussion between the professional technician and a local producer or entrepreneur searching for an appropriate technology.

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