

A.I.D. RESEARCH & DEVELOPMENT ABSTRACTS



**UNITED STATES AGENCY
FOR INTERNATIONAL
DEVELOPMENT (A.I.D.)**

**Volume 11, Number 1/2 1983
TN-AAA-038**

FROM THE EDITOR

Development Administration from the Grassroots

Development means the increased capacity of individuals and peoples to shape their lives on their own terms and in accordance with their own cultural and physical world. The immediate relevance of this truth to development assistance strategy has been learned, however, only through long and sometimes frustrating experience.

During the "brick and mortar" years of the 1950's and 1960's, development assistance strategy emphasized large-scale construction of the physical infrastructure needed for self-sustaining economic development. Later, as these physical structures often went unused in non-supportive environments, the emphasis shifted to institution building, which during the 1960's, focused on creating, in the public sectors of developing nations, efficient, Western-type bureaucracies capable of managing large projects. With this latter emphasis, development administration as a separate field was born.

In the early 1970's the focus of development assistance strategy shifted again. As the authors of a paper on managing decentralized rural development (item 006 in this issue of *ARDA*) express it, "The then-current emphasis upon industrialization, infrastructure, and massive projects dependent upon energy-intensive technology was questioned. Rural development, small-scale technology, and projects to serve the very poor began to be given priority. This change of emphasis reflected a recognition of major world problems relating to food, energy, and the failure of many earlier attempts to bring about rapid economic growth. It also reflected a new concern for the way some of the earlier development efforts had reduced the real living standards of the poor." This new concern was given programmatic recognition in A.I.D.'s New Directions Mandate of 1973 which stressed the need to direct development efforts toward the poor majority in developing countries and to involve them as active participants in the development process. Concomitantly, institution building came to emphasize the strengthening of local - as opposed to national - organizations as a means of ensuring that they could absorb new resources and sustain development efforts when these resources were exhausted.

Decentralization

Decentralization, or the shifting of administrative authority to organizations directly linked with the people expected to benefit from development assistance, is integral to grassroots development administration. This issue of *ARDA* announces five reports produced under A.I.D.'s Project on Managing Decentralization. The reports, respectively, explore definitions of centralization and decentralization (item 009); suggest strategies for avoiding the pitfall of conceptualizing decentralization in centralist terms (item 008); provide a framework for differentiating types of decentralization policies, concluding that decentralization is more difficult to achieve or is less appealing in developing countries than in industrialized countries (item 007); describe inter-organizational linkages crucial to successful decentralization of rural development efforts (item 010); and examine problems that donors face when planning and managing decentralized rural development projects, concluding that such projects can only succeed within an organizational and cultural context that encourages the forma-

tion of partnerships between donors and local organizations (item 006).

The application of concepts of decentralization to an actual development project is the subject of two reports dealing with a pilot project to increase the capacity of Egyptian governorate personnel to design and implement development projects (items 015 and 026). Another paper relevant to decentralization (item 187) examines approaches to strengthening the ability of secondary cities to manage their own development.

Participatory Development

Local participation in the development process is an essential condition to meaningful expansion of rural peoples' ability to guide their lives and control their environment. Addressing this topic, a state-of-the-art study of the feasibility and application of participation in rural development (item 029) examines the evolution of participation and clarifies the meaning of the concept for development practitioners. Another study (item 031) identifies the potentials and risks of using local organizations to increase the well-being of the rural poor and details how A.I.D. might design and implement projects that would make effective use of these organizations.

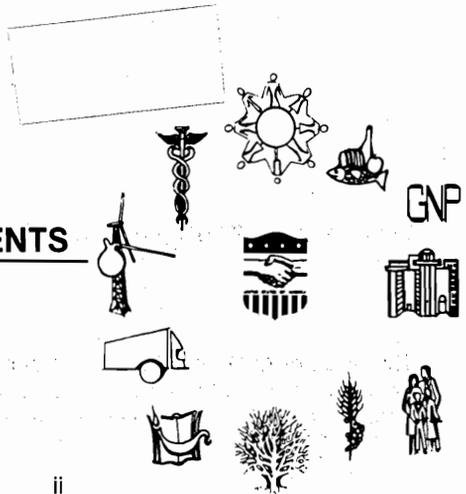
Participation is particularly crucial in integrated rural development (IRD) projects, which seek to enhance the overall quality of life of rural people rather than to solve specific problems. Several reports announced in this issue concern IRD. These include a review of the basic rationale behind IRD projects (item 011) and six working papers prepared under A.I.D.'s Organization and Administration of IRD Project. The first paper (item 016) presents operational guidelines for actively involving the poor majority in the development process. The second (item 019) illustrates how the development of local organizations can facilitate implementation of IRD projects, which require greater cooperation and coordination of diverse efforts than do single sector projects. The four other working papers report on IRD projects in Panama (item 020), Columbia (item 018), Indonesia (item 021), and Botswana (item 014).

Managing Development

The complex and constantly shifting social, economic, and environmental conditions extant in developing countries pose a continuing challenge to development administrators. Accordingly, several papers announced in this issue deal with techniques for managing development. A comprehensive state-of-the-art study of development administration (item 027) focuses on strategies for increasing the effectiveness of development assistance, while identifying contingencies that would limit what can be attempted; a case study of the Masai Range Development Project and a 1,000-item bibliography are included. Another report (item 017) stresses the crucial role of capacity building in development administration. Also cited are an inquiry into new and experimental approaches to social development management (item 004), an 83-item bibliography on that topic (item 005), a discussion of development management as a technology (item 003), and a paper providing a methodology for conducting urban and regional analyses of development problems (item 032). Finally, an examination of development administration in Africa (item 028) advocates projects to provide direct assistance in this area to host government agencies.

(Continued on inside back cover)

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ARDA is published quarterly by the
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 Washington, D.C.

ITEMS OF SPECIAL INTEREST

This issue of *ARDA* highlights several reports produced by A.I.D.'s Economic and Social Data Services Division. To obtain microfiche or paper copies of these publications, please refer to the *ARDA* Ordering Instructions; you will be invoiced later. For more information, contact the Agency for International Development, DIHF/ESDS, 7222 47th Street, Chevy Chase, MD 20815, U.S.A.; Phone (301) 657-9319.

ALLDATA Reports are separately available for 177 countries and contain all of the most recent statistics from A.I.D.'s Economic and Social Data Bank for a given country. The information in these reports is continually updated and expanded as new material becomes available. *Specify country when ordering; available in paper only.*

An Inventory of A.I.D. Micro Data Sets for Developing Countries summarizes over 200 post-1974 data collection activities which have yielded valuable but often overlooked micro-level information on demography, health, nutrition, agriculture, housing, energy, natural resources, and education. Names of principal contacts for obtaining further information and publications are included. *Order as PN-AAL-274.*

The **Statistical Profile Series for A.I.D. Assisted Countries** reflects an ongoing effort to present data on sectors of priority concern to A.I.D. Currently available are **Indicators of Nutrition in A.I.D. Assisted Countries** (PN-AAL-272); **Indicators of Food and Agriculture in A.I.D. Assisted Countries** (PN-AAK-275); and **Indicators of Education in A.I.D. Assisted Countries** (PN-AAK-276). Additional reports are planned on energy, population, housing, and natural resources.

World Indices of Agricultural and Food Production, 1972-1981 presents indices of total and per capita agricultural and food production for 108 countries and the world. The one-volume report was prepared by the U.S. Department of Agriculture's Economic Research Service with partial funding provided by A.I.D. *Order as PN-AAK-964. Also available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161 for MF \$4.00 and PC \$15.00.*

Reports of **Selected Statistical Data by Sex** are available separately for 69 countries and offer economic and social data disaggregated by sex, age, and residence for a variety of demographic, education, health, household, income, and employment variables in order to facilitate a better understanding of the role of women in AID-participating countries. *Specify country when ordering.*

The **Economic and Social Data Bank Data Element Dictionary** provides detailed definitions, data sources, and other information for each statistical data element in A.I.D.'s automated Economic and Social Data Bank. Elements are arranged by economic and social categories and by a hierarchy of sub-categories. *Order as PN-AAL-273.*

Country Development Strategy Statement Data Abstracts, available for most AID-assisted countries, provide a selection of economic and social progress indicators. Included are such subjects as national income, agriculture, foreign assistance, income distribution, health, and employment. Data are presented in tabular form as well as through computer drawn maps and charts. *Specify country when ordering.*

The **Congressional Presentation Economic and Social Data for A.I.D. Assisted Countries**, compiles in one volume for each fiscal year economic and social statistics for A.I.D. recipient countries. The report is divided by region—Africa, Asia, Latin America, and the Near East—as well as by recipients of development assistance and economic support funds. *The FY 1983 volume is available as PN-AAL-275.*

QUESTIONS AND ANSWERS ABOUT ARDA

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

QUESTIONS ET REPONSES RELATIVES A ARDA

- Qu'est-ce qu'ARDA?** ARDA, "A.I.D. Research and Development Abstracts (Résumés sur la Recherche et le Développement de l'Agence pour le Développement International)", est une revue trimestrielle des abrégés publiés par la Division de la Documentation et des Informations, Bureau de Coordination de Programmes et Politiques.
- Quel est l'objectif d'ARDA?** Le but d'ARDA est de transmettre des informations techniques sur le développement à ceux qui prêtent assistance au développement.
- A qui s'adresse ARDA?** ARDA s'adresse au personnel d'A.I.D. dans le monde entier et à certaines institutions clés situées dans les pays en voie de développement. Ces institutions comprennent des agences de gouvernement, des universités, des bibliothèques, des organisations de recherche, et d'autres organisations dans les secteurs publics et privés.
- Que contiennent les résumés d'ARDA?** ARDA présente des résumés des recherches actuelles et moins récentes financées par A.I.D., des rapports sur l'état actuel du développement, des analyses de différents domaines, des évaluations spéciales, et d'autres documents. Le tout ensemble décrivent une vaste étendue d'expériences dans le domaine du développement international.
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- ¿Que es ARDA?** ARDA, "A.I.D. Research and Development Abstracts" (Resumenes de Investigación y Desarrollo de la Agencia para el Desarrollo Internacional), es un periódico trimestral de resumenes editado por la Division de Documentación e Información, Departamento de Coordinación de Programas y Políticas.
- ¿Cual es el objetivo de ARDA?** El objetivo de ARDA es comunicar información técnica y sobre el desarrollo a los participantes activos en las actividades del desarrollo.
- ¿Para quien se publica ARDA?** ARDA se dirige al personal mundial de A.I.D. y a las 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.
- ¿Que contienen los informes de ARDA?** ARDA presenta resumenes de estudios actuales y menos recientes financiados por A.I.D. relativos a la investigación, de informes sobre el estado del arte, de analisis de sectores, de evaluaciones especiales, y de otros documentos, los que todos juntos describen un panorama extensivo de experiencias dentro del dominio del desarrollo internacional.
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U.S.A.

USER'S GUIDE TO ARDA CITATIONS

Item number	101	PN-AAK-592	Document number
		MF \$3.24/PC \$28.47	
Title	Soybean seed quality and stand establishment; proceedings		Microfiche/ Paper Copy prices
Author(s)	Sinclair, J.B.; Jackobs, J.A.		
Institution(s)	University of Illinois at Urbana-Champaign. College of Agriculture. International Soybean Program		
Meeting	(Conference on Soybean Seed Quality and Stand Establishment, Colombo, LK, 25-31 Jan 1981)		Serial title and number, date, pagination, and language
Supplementary note(s)	INTSOY series, no. 22, 1982, xiii, 206 p.; En Published by University of Illinois at Urbana-Champaign Grant DAN-1406-G-00-1015-00		
Project number	93105600		Publisher
Contract/Grant	AID/ta-C-1294		

Soybean research has shown that both physical and biological factors are responsible for reduced seed quality and vigor, that stand establishment depends on seed quality, and that seed quality is directly influenced by weather conditions during seed maturation and harvest and by subsequent storage conditions. Because knowledge of these facts remains largely fragmented and is not being communicated to farmers, the International Soybean Program (INTSOY) hosted an international conference in Sri Lanka for research scientists and extensionists to correlate current knowledge on soybean seed quality and stand establishment, discuss ways to communicate this knowledge to farmers, and determine future research needs.

The conference proceedings presented in this volume include: (1) 19 invited papers and abstracts of 13 volunteered papers on soybean seed maturation, genetic differences in seeds, the effect of weather, harvesting and planting procedures, and the role of insects and pathogens; (2) 11 country reports from various Asian nations; and (3) reports from three working committees on soybean production, crop protection, and storage and mechanization

In the plenary sessions, the speakers voiced a number of proposals on what emerged as a major concern among the delegates—the importance of seed quality in expanding soybean production in tropical and semi-tropical areas. Pointed out in particular was the complexity of soybean seed production in the tropics and semi-tropics due to the high humidity and temperature levels that prevail throughout the year. Other themes sounded were the necessity for good seed to make soybean an economical crop and the nutritional importance of soybeans.

All information presented during the conference related to seed production, technology, and storage and to seed certification in tropical and semi-tropical developing countries. Such information is directly related not only to INTSOY goals, but to complementary efforts of other international donors such as the Food and Agriculture Organization's ongoing Regional Field Food Crops project in North Africa and the Middle East.

Abstract

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GENERAL DEVELOPMENT

001

PN-AAK-977
MF \$2.16/PC \$22.88

Project officers' guidebook on host country contracting

Development Associates, Inc.; U.S. Agency for International Development
Jun 1982, vii, 108p. + appendices : En Work order no. 5
AID/SOD/PDC-C-0158

Although A.I.D. has increasingly relied on contractors to execute its projects, it retains responsibility for ensuring the proper use of project funds. This guidebook was designed to assist A.I.D. project officers to efficiently and effectively monitor AID-financed host country contracts.

An introductory section discusses the guidebook's background and scope, and the qualifications and responsibilities of A.I.D. project officers. An overview of planning for implementation and monitoring is then presented. Next the role of the project officer in procurement by host countries of professional and technical services, construction services, and equipment and materials is outlined. A final section details procedures for implementing and monitoring contracts. Appendices provide further information on such issues as host country procurement capabilities, methods of payment and documentation, mandatory contract provisions, and contract waivers.

002

PN-AAL-172
MF \$3.24/PC \$32.76

Cooperation between American corporations and private voluntary organizations in the developing world

Inter-American Development Institute; U.S. Agency for International Development. Advisory Committee on Voluntary Foreign Aid
(Cooperation between American Corporations and Private Voluntary Organizations in the Developing World, New York, NY, US, 25-26 Mar 1982)
1982, v.p. : En
PDC-0000-C-00-2056-00

There is a need for increased cooperation between PVO's and corporations involved in social investment and development activities in the Third World. This report includes the papers presented at a 3/82 meeting of representatives from 90 PVO's and 22 transnational corporations to examine and discuss this issue. The purpose of the meeting was two-fold - to continue discussions on mutual cooperation and to review the draft policy paper on AID-PVO cooperation.

Relating to the first purpose, the presentations of corporate and PVO executives touched on four major topics: the need for better communication between PVO's and corporations; corporate desires to obtain PVO expertise in exchange for funding or in-kind assistance; the stifling effect of federal regulations and procedures on PVO-corporate cooperation; and a possible role for A.I.D.'s Bureau for Private Enterprise in organizing workshops and developing a data base on corporate and PVO development activities.

Testimonies from 11 PVO representatives (included in appendices) expressed five major points regarding the draft policy paper on A.I.D. support for the international programs of PVO's: (1) the possible detrimental effects on unestablished PVO's; (2) the figuring of in-kind contributions into grant eligibility; (3) the general character of the draft; (4) the need to reinforce humani-

tarian concerns; and (5) the need to promote private support of PVO's.

003

PN-AAL-200
MF \$1.08/PC \$3.12

Appropriate management technology: a development administration perspective

Ingle, Marcus D.
Practical Concepts, Inc.
(American Society for Public Administration, 1981, Detroit, MI, US, 1981)
Apr 1981, 22p. : En

Poor public sector performance in the developing world can frequently be attributed to inappropriate transfer and application of management theories and techniques. This paper argues that public sector performance can be substantially improved if management is conceived of and applied as a technology derived from the emerging science of management.

Following a brief introduction, the author reviews the shortcomings of attempts to transfer Western management theories and techniques, pointing out that such theories are ill-suited to the administrative needs of developing countries and that Western managerial techniques are excessively complex and design-oriented. Next, the principles of appropriate technology are applied to development management. It is suggested that indigenous management approaches are often the most appropriate.

The author then examines current developments in management technology, particularly the program/project management system, and concludes that management technology approaches have proven effective in improving organizational performance. Finally, the research, consulting, and training implications of management technology are discussed. A management technology glossary and a 25-item bibliography are included.

004

PN-AAL-222
MF \$1.08/PC \$1.82

Social development management in the context of international development; a workbook to initiate an inquiry

Joy, Leonard; Klauss, Rudi; Thomas, Theodore
National Association of Schools of Public Affairs and Administration; U.S. Agency for International Development. Bureau for Science and Technology. Office of Multisectoral Development
Jul 1982, 9p. : En
9360096
AID/DSAN-CA-0180

The lack of success of development projects in benefitting the poor presents a challenge to traditional development strategies, leading development practitioners to experiment with newer approaches such as community organizing and empowerment strategies, participatory management, and social learning systems. Such approaches, however, while converging both theoretically and practically, have yet to merge into a single, coherent strategy for development administration.

This inquiry, the idea for which stemmed from a 1982 AID-financed workshop held in Washington, D.C., provides a broadly structured checklist to encourage a wide range of responses



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to the newer approaches. For this reason, the inquiry adopts an attitude of openness to exploratory or conflicting viewpoints and concerns and encourages constructive challenges.

The inquiry's main topic areas are: (1) the basis for the respondent's present interest; (2) a consideration of premises, perceptions, and arguments; (3) the nature of the challenge; (4) performance criteria; (5) unresolved questions; and (6) review and reflection.

005

PN-AAL-223

MF \$1.08/PC \$8.58

Social development management: an annotated bibliography

Shields, Elisabeth

National Association of Schools of Public Affairs and Administration; U.S. Agency for International Development. Bureau for Science and Technology. Office of Multisectoral Development

Jun 1982, 62p. : En

9360096

AID/DSAN-CA-0180

Management in the context of social development involves not only the activities of managers, but encompasses the entire process by which a nation's resources are applied to development goals. The enormity of this task constantly requires new knowledge and new networks of knowledgeable persons. This 83-item annotated bibliography (1939-82) constitutes part of an ongoing effort to consolidate references pertinent to the management of holistic social development.

The references are divided into sections which correspond to the three themes of holistic development management. (1) Development involves significant social transformation and learning which results from relevant groups participating in the development process. (2) New organizations are needed in order for citizens to express their needs and preferences. (3) Community organizations through which the poor take charge of solving their own problems are desperately needed. The author notes that while the entries in each section were assigned on the basis of the dominant theme, most of the documents are so holistic in approach as to be relevant to all three themes.

006

PN-AAL-307

MF \$2.16/PC \$24.05

Non-governmental organizations in managing decentralization of rural development

Colson, Elizabeth; Anderson, James; Ralston, Lenore
University of California, Berkeley. Institute of International Studies

1981/02, 167p. : En

9311053

AID/DSAN-CA-0199

It is now generally recognized that development must be defined in local terms and tailored to local situations. This paper examines problems that donors face in planning and managing small-scale, decentralized rural development projects.

After providing background on the recent donor shift toward small-scale, rural, decentralized projects, the authors examine features of voluntary organizations that may impede coopera-

tion with local systems and describe some of the organizational forms that can be found at the local level. Various difficulties that are associated with decentralized, local-participation project management are pointed out. For example, decentralization often benefits the existing local elite and not the targeted poor. Also, the priorities of rural communities and those of their governments and of international donors do not always coincide.

The authors conclude that rural development technologies cannot simply be transferred. They can only develop within a congenial, people-centered, organizational and cultural context, through development programs that match the scale and interests of existing rural organizations and form genuine partnerships with these organizations.

007

PN-AAL-318

MF \$2.16/PC \$21.71

Decentralization: a framework for policy analysis

Cohen, Stephen S.; Dyckman, John W.; et al.
University of California, Berkeley. Institute of International Studies; U.S. Agency for International Development

Feb 1981, 163p. : Bibliography: p.151-163, En

9311053

AID/DSAN-CA-0199

As a contribution to the current debate over decentralization in development, this report offers a framework for differentiating types of decentralization policies.

Several forms of decentralization - deconcentration, devolution, delegation to autonomous agencies or parallel organizations, privatization, and worker self-management - are described, and administrative, political, economic, and value-oriented rationales for decentralization are reviewed. Next, the authors outline several normative theories underlying arguments for decentralization: public choice and public administration theories and approaches from standpoints of political sociology, government policy, and cultural factors. The authors conclude that decentralization is more difficult to achieve or is less traditionally appealing in developing countries than in richer countries. Appended is a 176-item bibliography (1856-1981).

008

PN-AAL-319

MF \$2.16/PC \$16.12

On styles of noncentralized planning

Christensen, Karen S.; Webber, Melvin M.
University of California, Berkeley. Institute of International Studies; U.S. Agency for International Development

Mar 1981, iv, 117p. : En

9311053

AID/DSAN-CA-0199

Most efforts to promote decentralized planning in LDC's are unsuccessful because current concepts of decentralization are fundamentally centralist. This report suggests several general strategies for escaping this conceptual trap and for easing implementation of decentralized development.

After exploring the hypothetical extremes of pure centralized and noncentralized planning, the authors proceed to expand the meanings of planning and decentralization to suggest a range of options applicable to the political, econom-



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ic, and social conditions and associated complications found in developing countries. Next, the origins and nature of ministerial dominance – a pervasive impediment to noncentralized planning – are described and possible strategies for overcoming this dominance are outlined. The authors go on to discuss the problem of coordination in light of new approaches to planning. Finally, the authors reconsider decentralization and offer five general decentralization strategies: (1) exploit uncertainty; (2) keep the decisionmaking system open; (3) achieve change through interaction; (4) decontrol to learn while doing; and (5) tailor planning to local social, economic, and political conditions. Specific suggestions follow.

009

PN-AAL-320

MF \$1.08/PC \$7.54

On the concept of decentralization

Landau, Martin; Eagle, Eva
University of California, Berkeley. Institute of International Studies

Mar 1981, 56p. : En
9311053
AID/DSAN-CA-0199

Decentralization is viewed as a way to reduce administrative congestion. This monograph attempts to define the concept of decentralization as it applies to public administration in LDC's.

Definitions of centralization and decentralization are explored. It is noted that modernization produces a trend toward centralization and that decentralization follows the collapse of a centralized organization. The roles of fact and value decisions are outlined, as is the dichotomy between a centralized authority legitimized by incumbency and a decentralized one based on professional competence.

Next, a four-cell matrix of decision modes is described which involves the interaction of values/preferences and factual judgements. Programmed decisions are based on facts and require centralized decisions. Pragmatic decisions reveal agreement on outcome but absence of means to accomplish it, indicating the need for decentralized decisions. Bargaining, based solely on value judgments, requires decentralized decisions. An absence of agreement on both fact and value judgments, a possible result of bargaining, can result in total organizational breakdown. Possible solutions include departmentalization – a policy of avoidance – or in the case of public administration, the exercise of external authority.

010

PN-AAL-321

MF \$4.32/PC \$43.68

Linkages to decentralized units

Leonard, David; Marshall, Dale; et al.
University of California, Berkeley. Institute of International Studies

Feb 1981, v.p. : En
9311053
AID/DSAN-CA-0199

While rural development depends on decentralization to promote decisionmaking in the field, most decentralized development programs fail because they cannot respond to local leaders' needs and ideas. This monograph systematically describes the inter-organizational linkages which are crucial to successful rural development efforts.

Chapter I introduces the study's research methods and outlines the general principles governing the choice of implementation structures, the factors which make programs vulnerable to inequality, and various modes of decentralization. Chapter II analyzes linkage lessons from U.S. poverty programs. Chapter III explores how governments can promote and sustain the community-wide organizational structures needed for broad-based agricultural growth, while Chapter IV analyzes the role of linkages in settings where national governments are ambivalent toward the interests of the poor. Chapter V discusses health care linkages in the Third World. Finally, Chapter VI describes the role of decentralization and linkages in relation to small-scale public works.

The authors conclude that the challenge is to link institutions at various levels in such a way that their weaknesses are counterbalanced by their comparative advantages, thereby making contributions to development which neither local nor national institutions could achieve alone. Extensive references follow each chapter.

011

PN-AAL-323

MF \$1.08/PC \$5.20

Planning for integrated rural and community development: concept paper

Yoder, P. Stanley
Drew (Charles R.) Medical Center. Office of International Health and Economic Development
n.d., 36p. : Bibliography, p.36, En
9361406
PDC-1406-I-00-1124-00

To counter the failure of many past development efforts, this report presents a rationale for planning integrated rural development (IRD) projects which recognize the complex relationships which obtain among the many domains of daily life.

The report is organized into sections reflecting various lessons learned from the successes and failures of past development projects. The first section defines development and discusses the various criteria used to measure it. The second section presents generalizations about rural life in the Third World. The third section compares alternative development strategies. The fourth section details several issues which must be addressed in designing and implementing any project, while the fifth section describes the specific components of IRD projects.

Finally, the authors present the case for IRD. IRD projects are integrated in two senses – they involve several sectors and they recognize that changes brought about in one domain engender changes in other domains of everyday life. The authors argue that projects which are relatively small and geared to a longer timeframe have a greater chance for success. Also, project personnel must take seriously local expressions of what is needed and what is workable.



GENERAL DEVELOPMENT

012

PN-AAL-328

MF \$1.08/PC \$4.68

Natural disasters and the development process: a discussion of issues

Funaro-Curtis, Rita

U.S. Agency for International Development. Office of U.S. Foreign Disaster Assistance; Evaluation Technologies, Inc.

Jul 1982, 33p. : Bibliography, p.31-33, En
AID/SOD/PDC-C-0283

To further understanding of the link between natural disasters, to which developing countries are particularly vulnerable, and the development process, this report examines four natural disasters and describes several AID-sponsored disaster mitigation and preparedness projects.

First, the magnitude and economic impact of the 1972 earthquake in Nicaragua, Hurricane Fifi in Honduras in 1974, the 1974 floods in Bangladesh, and Chad's prolonged drought in the early 1970's are examined. Disaster preparedness levels in each case are discussed. The cases demonstrate that economically vital agricultural sectors usually sustain the most damage and that disasters also strain public sector finances, worsen the balance of payments, and take a high toll on human resources.

Next, the paper describes various early warning systems used in disaster prevention projects, including remote sensing or agro-climatic techniques such as climate/crop yield models, historical yield indices, and crop calendars. Several interdisciplinary A.I.D. disaster preparedness projects are also discussed. Appended is a 38-item bibliography (1972-81).

013

* PN-AAL-332

MF \$1.08/PC \$12.74

Marine technical assistance to developing countries: the U.S. role

National Academy of Sciences. National Research Council. Commission on Physical Sciences, Mathematics, and Resources. Ocean Policy Committee. Marine Technical Assistance Group

1982, ix, 88p. : References, p.20-21, 49, 72-73, 87-88, En
9311155

AID/DSAN-G-0168

* *Ocean Policy Committee, National Academy of Sciences, 2101 Constitution Avenue, N.W., Washington, D.C. 20418*

United States programs to assist foreign nations in the development of marine resources have grown in response to changing international conditions. This study considers the needs of developing countries for marine technical assistance, the adequacy of current U.S. assistance, and the direction U.S. policy should take. After a discussion of U.S. public and private marine assistance objectives and mechanisms, the marine assistance activities of other developed countries and international organizations are described; a number of current trends in technical assistance are examined; and finally, a series of recommendations is presented.

In recognition of the growing importance of marine development to coastal nations, the United States should allocate a greater proportion of assistance to marine technical and scientific support. Specifically, U.S. policy should emphasize assistance in marine science and technology under circumstances beneficial to U.S. interests, targeting such assistance where it will be most effective, i.e., nations with a history of maritime

commerce and not necessarily those which are most impoverished. Training programs in U.S. universities remain an effective means of upgrading a developing country's technical capabilities. Underlying all programs should be the strategy to build local capabilities through local participation.

014

PN-AAL-354

MF \$1.08/PC \$5.59

Planning for the communal first development areas in Botswana: a framework

Barclay, A.H. Jr.

Development Alternatives, Inc.; U.S. Agency for International Development. Bureau for Science and Technology. Office of Rural Development and Development Administration

Nov 1981, vi, 27p. + annexes : En

9365300

AID/DSAN-C-0065

The vast majority of Botswana's rural population resides in communal areas where problems of low agricultural production, unemployment, and underemployment are acute. To address these problems, the Government of Botswana (GOB) is planning an area-based, integrated development approach in which a certain communal area - called a Communal First Development Area (CFDA) - will be selected in each district to receive priority attention for several years. In addition to increasing agricultural production and employment, the CFDA program will address the complex issues of land use planning and land management.

The purpose of this report is to suggest operational guidelines showing how integrated area development, as yet untried in Botswana, can be implemented. Following a brief overview of the CFDA program's administrative framework, guidelines are presented for: defining and selecting CFDA's; obtaining the data needed to prepare a CFDA plan; defining activity and impact targets; setting timetables for program planning, implementation, and evaluation; and mobilizing local participation. The report stresses the leadership role that should be played by the Rural Development Unit of the GOB's Ministry of Finance and Development Planning and by the interministerial Communal Areas Working Group, in coordinating line ministry and district planning for CFDA's.

015

PN-AAL-356

MF \$1.08/PC \$11.44

Building capacity for decentralization in Egypt: some perspectives

Walker, Tjip; Lewis, David B.; et al

Development Alternatives, Inc.; U.S. Agency for International Development. Bureau for Science and Technology. Office of Rural Development and Development Administration

IRD working paper, no.10, Oct 1981, xi, 89p. : Bibliography, p.87-89, En

9365300

AID/DSAN-C-0065

Perspectives of project staff on the operational and theoretical challenges faced in designing - as part of the Egyptian decentralization program - a pilot training project aimed at building a capacity for project design and implementation in Governorate-level personnel are presented in this collection of 14 articles.



GENERAL DEVELOPMENT

The articles are organized into four parts, each having an introduction. Part I provides a theoretical orientation by defining decentralization, capacity building, and the relationship between the two, while Part II gives the background of the Egyptian decentralization strategy. Part III provides two critiques of traditional training strategies and offers alternatives. Lastly, Part IV offers two designs for pilot training projects which respond to the needs identified in the earlier articles.

Since decentralization is inherently a transfer of power, the effort was to develop a training program responsive to power devolution and capable of transferring management as well as technical skills while also being sensitive to incentives. A 31-item bibliography (1969-81) is appended.

016 **PN-AAL-357**
MF \$1.08/PC \$4.94

Beyond the rhetoric of rural development participation: how can it be done?

Gow, David D.; VanSant, Jerry

Development Alternatives, Inc.; U.S. Agency for International Development. Bureau for Science and Technology. Office of Rural Development and Development Administration
IRD working paper, no.9, Jun 1981, 37p. : Bibliography, p.33-37, En
9365300

AID/DSAN-C-0065

In 1973, A.I.D.'s New Directions mandate stressed development efforts that reach the poor majority in the Third World and involve them as active participants in the rural development process. This paper explores ways to achieve such participation.

The first two sections describe, respectively, three well-known movements to achieve participation: rural cooperatives; community development; and rural animation. Their respective shortcomings and constraints to participation posed by national policies, national and donor bureaucracies, and the immediate project environment are reviewed.

The third section draws on these experiences and on recent development literature to suggest a set of eight operational guidelines deemed necessary for creating effective local participation. Stress is laid on building local organizational capacities and decentralizing the development process itself. Exemplification of the use of these guidelines in two projects - in Guatemala and Indonesia - concludes the study. A 59-item bibliography is appended.

017 **PN-AAL-358**
MF \$1.08/PC \$14.82

Fishing for sustainability: the role of capacity building in development administration

Honadle, George H.

Development Alternatives, Inc.; U.S. Agency for International Development. Bureau for Science and Technology. Office of Rural Development and Development Administration
IRD working paper, no.8, Jun 1981, 106p. : Bibliography, p.97-106, En
9365300

AID/DSAN-C-0065

Unless local capacity building is achieved, development becomes an ideology without a technology. Thus argues this

monograph on the evolution of and experience with capacity building.

First, the authors argue that development practitioners must look beyond the establishment of infrastructure to the role of organizational capacity as the means for ensuring self-sustaining development. Next, three approaches to defining capacity (dynamic/impact, static/internal, boundary-spanning) are presented; the first appears to provide the most practical guidance. Based on an analysis of field experience in Indonesia, Jamaica, and Liberia, the authors then discern seven factors critical to successful capacity building. Five of these - risk sharing, multiple levels, demonstration, collaboration, and emphasis on learning - are process-oriented; the other two - incentives and resource base - are substance or structure-oriented. Finally, the state of the art in capacity building is summarized and future directions are suggested.

For donors, this assessment suggests that: simple resource transfers (e.g., block grants) will not build capacity; capacity building efforts must involve many levels of an organizations' hierarchy; and capacity building must be explicitly included in project designs. A 156-item bibliography is appended.

018 **PN-AAL-359**
MF \$1.08/PC \$5.20

IRD in Columbia: making it work

Jackson, Donald R.; Gow, David D.; et al

Development Alternatives, Inc.; U.S. Agency for International Development. Bureau for Science and Technology. Office of Rural Development and Development Administration
IRD working paper, no.7, Jun 1981, (38p.) : Bibliography, p.29-30, En
9365300

AID/DSAN-C-0065

Providing credit to small farmers is the major component of the Integrated Rural Development (IRD) program in Colombia. This report considers IRD strategy, organization, and administration at the national and project levels, along with critical issues of program implementation.

IRD in Colombia has pursued two distinct but inter-related strategies: having line agencies focus on a specific target group within a specific geographical area, and having various agencies work together on joint projects toward intermediate objectives. Lending policies of the Caja Agraria (a credit organization) have been effectively redirected toward the small farmer and Caja activities coordinated with those of the agricultural extension. Organization and training of small farmer groups has also been successful; only the marketing agency, troubled by internal political problems, has not lived up to expectations. Participation by IRD beneficiaries, particularly in planning, is increasing, with initiatives coming from the communities themselves. Problem areas have included implementation delays and the differing agendas of key participants. The ability of the program to meet increasing recurrent costs will determine its sustainability and expansion. A 14-item (1975-81) bibliography and a list of available IRD documentation are appended.



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019

PN-AAL-360

MF \$1.08/PC \$3.90

Using organization development in integrated rural development

Armor, Thomas H.

Development Alternatives, Inc.; U.S. Agency for International Development. Bureau for Science and Technology. Office of Rural Development and Development Administration

IRD working paper, no.6, May 1981, vi, 27p. : References, p.27, En

9365300

AID/DSAN-C-0065

Management is a major determinant of success in development projects. Integrated rural development (IRD) projects tend to multiply difficulties because they call for greater coordination and cooperation, and orchestration of diverse efforts than do single sector projects. This paper seeks to illustrate how the use of organization development can assist IRD project implementation.

Organization development applies social science theory to the process of managing change in an organization's behavior focusing on the process of problem identification and helping individuals understand their contribution to the collective behavior of an organization. Methods of organizational development are discussed, and four actual project applications in Jamaica, Zaire, Liberia, and the Philippines are described. These examples are then used to illustrate some of the important issues guiding the organization development process: the entry of organizational development into the picture; planning the intervention; use of data; and the continuity of organizational development. The process of building organizational development into IRD projects is explained, citing issues of potential interest to project designers.

020

PN-AAL-362

MF \$1.08/PC \$8.32

Differing agendas: the politics of IRD project design in Panama; IRD field report

Gow, David D.; Bishop, John; et al

Development Alternatives, Inc.; U.S. Agency for International Development. Bureau for Science and Technology. Office of Rural Development and Development Administration

Jul 1981, (62p.) : Bibliography, p.49-50, En

9365300

AID/DSAN-C-0065

Building on the lessons learned in the failure of a pilot integrated rural development (IRD) project in Panama's Tonosi Province, this report outlines a realistic design for an IRD project in Veraguas Province.

To avoid repeating Tonosi's failures, it is first noted that the new project should: ensure cooperation between the Ministries of Planning (MIPPE) and of Agricultural Development (MIDA), with MIPPE assigned coordination responsibility; generate participation by all concerned; and avoid alienating large landowners by a land reform program. (Steps have already been taken on these issues).

The second section describes the project area and intended beneficiaries in terms of the shifting cultivation/cattle ranching complex; land tenure patterns; farming systems; human resources; infrastructure; and political organizations. The project's agricultural, agribusiness, and livestock/forestry components are detailed in section three, as is the component to

create within MIPPE an institutional capacity to implement IRD projects. The budget for these components and for the project's roads and social services components are presented.

The final section deals with the political, economic, and environmental constraints on the project; organizational placement and linkages; participation and decentralization; the differing agendas of key participants; and project sustainability. A bibliography and a list of IRD readings is appended.

021

PN-AAL-364

MF \$1.08/PC \$11.83

Supporting capacity-building in the Indonesia provincial development program; IRD field report

VanSant, Jerry; Effendy, Sofian; et al

Development Alternatives, Inc.; U.S. Agency for International Development. Bureau for Science and Technology. Office of Rural Development and Development Administration

Feb 1981, v.p. + annexes : En

9365300

AID/DSAN-C-0065

Capacity-building signifies an attempt to enhance individual and group abilities to implement self-sustaining development, and is a key aim of Indonesia's Provincial Development Program (PDP). This report reviews capacity-building performance in the four provinces covered under the second phase of the PDP and suggests strategies to further capacity-building initiatives.

Major overall concerns and measures of success regarding capacity-building in a pilot program like PDP are noted. These are: the degree to which government officials and PDP staff at all levels invite and promote bottom-up planning; the need to find ways to focus resources on capacity-building efforts within the varieties of the government structure; the sustainability of the institutional and subproject benefits stimulated by PDP after external funding is terminated; and strengthening the role of regional and provincial planning agencies in support of local PDP activities.

Specific findings regarding capacity-building in the provinces of Nusa Tenggara Timor, Kalimantan Selatan, and Bengkulu are located in attached annexes.

022

PN-AAL-400

MF \$2.16/PC \$20.80

Guidance for enhanced Peace Corps/AID field collaboration; fast disbursing AID funding mechanisms

Floyd, L.

U.S. Agency for International Development. Bureau for Program and Policy Coordination. Office of Planning and Budgeting

25 May 1982, 34p. + 5 annexes : Bibliography, attached, En

There is potential for collaboration between A.I.D. and the Peace Corps in the field which has yet to be fully tapped. This report explores five fast-disbursing mechanisms - programming models which fall outside standard bilateral A.I.D. projects - which have significant potential for fostering such collaboration.

First, the authors identify major issues which hinder collaborative efforts - communications, project timing, project plan-



ning, and training costs – and offer recommendations for improvements. Next, five mechanisms for fast disbursement of funds currently being used are described and analyzed. These include the Special Development Activity Authority, Accelerated Impact Program for Asia, Accelerated Impact Program for Africa, Improved Rural Technology Program for Africa, and Operational Program Grants for Private and Voluntary Organizations. Each mechanism is discussed in terms of its purpose, history, approval process, restrictions, and advantages or disadvantages. Appended is extensive supporting documentation regarding each of the disbursement programs.

023

PN-AAL-422

MF \$2.16/PC \$14.04

Study of the cooperative movement in Honduras

St. Siegens, Jorge; Rosa O., Ruben Antonio; Ramirez A., Vilma

U.S. Agency for International Development. Bureau for Latin America and the Caribbean. Honduras; Reyes (Elias Villegas) Institute for Cooperative Research and Training; Agricultural Cooperative Development International

Nov 1982, ix, 96p. + 4 appendices : Bibliography, p.91, En 9380161

AID/SOD/PDC-G-0176

A random sample survey of 139 of Honduras's 663 cooperatives was conducted to provide reliable data for future development of that country's cooperative movement. Results of the survey are presented in this report.

Treatment is given to the historical development of the cooperative movement, as well as to its structure and methods, current legal status, use of technology, and contribution to the economy. Eleven subsectors are discussed, of which the agricultural subsector is by far dominant. Problem areas identified in various subsectors include insufficient training in the principles of cooperativism, a low level of identification by the members with their cooperative, administrative shortcomings, inadequate technical training, insufficient financing, and provision of an insufficient number of services. Succeeding sections of the study treat the relation of the cooperative movement to the state, with a focus on the semi-autonomous Directorate for Cooperative Development (DIFOCOOP); prospects for new cooperative legislation; and institutions offering education in cooperativism. A list of foreign donors to the cooperative movement concludes the study.

024

PN-AAL-627

MF \$1.08/PC \$10.27

Cost-benefit analysis and project design; workbook: quantitative procedures and applications

Donahue, John D.; Simon, Jurgen

U.S. Agency for International Development. Office of Personnel Management. Training and Development Division; Indiana University. Midwest Universities Consortium for International Activities

1981, 78p. : En 9311172

Cost-benefit analysis, as a tool for project design and appraisal, brings together economic principles, empirical data,

and quantitative techniques to produce organized, clear, and easily understood estimates of a project's value. This workbook gives instruction on quantitative procedures, the mechanics of cost-benefit analysis.

The first part introduces the procedures needed to perform a cost-benefit analysis. Each procedure is covered in a short section that gives the purpose, the data requirements, and the results. The necessary formulas and abbreviations are explained and illustrated. Special worksheets that speed and simplify the procedures are introduced, and step-by-step instructions are provided. A fictional example – a tractor project – is then given.

The second part of the workbook is a case study of a irrigation project. Technical, financial, and economic descriptions drawn from an actual project are given so that the user may perform the cost-benefit analysis. The authors caution that the workbook does not present a special methodology nor does it address the non-technical dimensions of cost-benefit analysis. Finally, an appendix gives the discount and annuity factors needed to complete the case study analysis, and also provides answers to the exercise.

025

PN-AAL-642

MF \$1.08/PC \$9.10

Rural development planning project: planning tools for the identification and selection of projects for regional development; a descriptive manual

Riordan, James T.; Oostenbrug, Paul
Abt Associates, Inc.

Oct 1982, ii, 66p. : Bibliography, p.61-66, En

Work order no.10

AID/SOD/PDC-C-0389

An analysis is presented of five methodologies developed to meet the needs of Bolivia's Departmental Development Corporations (DDC's) and geared to the identification and selection of projects. The methodologies are: statistical profiles; constraints analysis; lines of intervention; urban functions in rural development; and ex-post facto evaluation. Following an overview of the regional development planning process in Bolivia, the potential roles and appropriate uses of these methodologies are discussed; the objectives, limitations, and time requirements of each are summarized; and the steps to be performed in applying them are outlined.

In the second half of the document, the authors discuss three regional development planning tools: the three tools encompassed by the sectoral planning methodology; the eight interrelated tools which comprise the urban functions in rural development methodology; and the impact evaluation planning tool. A 35-item annotated bibliography (1972-82) is appended.



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026

PN-AAL-702

MF \$1.08/PC \$11.83

Building capacity for decentralization in Egypt: the pilot project and beyond; an IRD field report

Walker, Tjip

Development Alternatives, Inc.; U.S. Agency for International Development. Bureau for Near East. Egypt

Jun 1982, xi, 53p. + 4 annexes : En

PDC-1406-1-00-1089-00

2630021

In furtherance of a policy of decentralization begun in 1960 and promoted dramatically since the late 1970's, the Government of Egypt, in cooperation with USAID/E, initiated a project to alleviate the considerable ambiguity and resulting poor performance in economic planning at the governorate level. This paper documents that pilot project which stressed the concept of devolving authority, linking participation to decentralization, and, especially, an action-oriented training approach focused on building institutional capacity.

A summary of project activities describes the workshops, surveys, seminars, and other activities undertaken during the planning, implementation, and evaluation/redesign phases. Following this is a digest of lessons learned from the project, especially those regarding implementing decentralization in Egypt, sponsoring workshops and training, and administering pilot projects. A description of the long-term program and follow-up project developed on the basis of the foregoing lessons concludes the report. Three annexes treat, respectively, the background of Egypt's decentralization strategy, decentralization as a function of Egypt's Basic Village Services Program, and the Sakkara Center for integrated rural development. A list of 53 references ends the report.

027

PN-AAL-740

MF \$2.16/PC \$24.44

Managing induced rural development

Moris, Jon R.

Indiana University. International Development Institute; U.S.

Agency for International Development. Bureau for Development Support

1981, xi, 190p. : Bibliography p.142-180, En

Too often rural development programs are planned without attending to the matrix of social, economic, and ecological conditions within which they will take place. This study of development administration, written from the perspective of the practitioner, focuses on strategies for increasing program and project effectiveness, while exploring the contingencies that limit what can be attempted.

The organizational formats common in rural development are analyzed, and problems in transferring technology are diagnosed. Among the topics explored are the theory and practice of national development strategies; strategies for improving administrative productivity within the rural sector; program development; the art of designing field agencies capable of taking intelligent action; project management; the combination of resources and procedures needed to implement various kinds of programs; and task organization - managerial methods effective in unproductive environments. Consideration is also given to a systems perspective on rural development and to the production of rural development information.

A case study of the Masai Range Development Project is also presented. The report concludes with suggested future directions in rural development strategies and studies. Appended is a bibliography containing more than 1,000 items.

028

PN-AAL-771

MF \$3.24/PC \$25.87

Development administration in Africa

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

Johnson (Jeffalyn) and Associates, Inc.

1982, 2v. : En

6980135

AFR-0135-C-00-1101-00

The capacity of various African nations to manage both development assistance and their own resources has become a major development issue. This report examines efforts throughout Africa to improve management of resources.

Volume I describes the evolution over three decades of A.I.D. policy on development administration and institution building, noting the underlying movement from long-term training in traditional public administration to greater stress on action-oriented, experiential management training. The authors then discuss their findings, organized around the major issues of nation building and institutional development. Finally, after discussing several current strategies to strengthen development administration, the authors advocate the use of special development management projects in which a core of A.I.D. specialists, working exclusive of the structure of individual A.I.D. projects, provided direct and flexible assistance to host government agencies.

Volume II expands on the above general discussion with six individual reports focusing on specific areas of management - training, information, financial, and health management, and the use of mobile management consulting teams - as well as on development administration issues in Swaziland.

029

PN-AAL-936

MF \$4.32/PC \$44.20

Feasibility and application of rural development participation: a state of the art paper

Uphoff, Norman T.; Cohen, John M.; Goldsmith, Arthur A.

Cornell University. Center for International Studies. Rural Development Committee; U.S. Agency for International Development. Bureau for Development Support. Office of Rural Development and Development Administration

Cornell University monograph series, no.3, Jan 1979, v, 338p.

: En

AID/TA-CA-1

Participation by rural people in their own development is widely promoted in current assistance strategies, although the meaning of participation remains ambiguous. This three-part state-of-the-art paper clarifies this meaning for concerned A.I.D. Mission personnel.

Part one relates past experiences with community development and animation rurale, two strategies predicated on popular participation, and goes on to consider institutional factors affecting the possibility for participating either positively (e.g., traditional and exogenously-induced local voluntary organizations) or negatively (e.g., local elites and administrative decen-



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tralization). Part two analyzes participation by those who do not usually participate in project design and implementation: the landless and near-landless, women, and disadvantaged ethnic groups. In part three, experiences with participatory approaches in specific kinds of activities – agricultural research, agricultural production and extension efforts, water management, rural health care, and public works – are reviewed. Emerging generalizations about the meaning of participation are set forth in conclusion. Appendices discuss changing views on participation and detail the “who”, “what” and “how” of participation.

030

PN-AAL-947

MF \$2.16/PC \$16.51

Economics of foreign aid and self-sustaining development

Mikesell, Raymond F.; Kilmarx, Robert A.; Kramish, Arvin M.
U.S. Agency for International Development; U.S. Department of Treasury; U.S. Department of State. Office of Long-Range Assessments and Research
Feb 1982, xiv, 113p. : En

Successful economic development in the last 30 years has been characterized by LDC government policies that are outward-oriented and provide free market incentives. So concludes this study of the effectiveness of foreign aid in promoting economic growth in developing countries.

The paper first examines the history of development theories and assistance, the rationale for aid, and the emergence of outward-looking policies for growth. Next, the shift in emphasis by development economists and foreign aid practitioners from stimulating growth to meeting basic human needs is discussed, with the two objectives judged to be compatible. Forms of aid and conditions under which it is given are considered and the effectiveness of concessionary aid in promoting self-sustaining economic growth is assessed. Empirical evidence on the effects of A.I.D. and other concessionary assistance projects is also provided.

The author concludes that concessionary aid should be provided only to countries with very low per capita incomes. Projects that increase private sector productivity should be given highest priority, while support for social projects and infrastructure should be limited to those that will contribute to economic growth. Infrastructure projects that mainly provide services to middle-class urban population should in particular be avoided. Finally, the author suggests that general program loans and loans to finance industrial imports have been less effective in promoting growth than have loans for specific projects having direct donor involvement.

031

PN-AAL-953

MF \$7.56/PC \$79.17

Local organizations and rural development: a comparative reappraisal

Gow, David D.; Morss, Elliott R.; et al.
Development Alternatives, Inc.; U.S. Agency for International Development. Bureau for Development Support. Office of Rural Development and Development Administration
Oct 1979, 2v. : Bibliography, p.241-249, En
9310986
AID/CM/ta-C-1323

While local rural organizations can be used positively to provide two-way communication, minimize risk, achieve economies of scale, promote political and economic independence, and spread the benefits of donor assistance among the rural poor, these same organizations can be used negatively to perpetuate inequities, control rural peoples, and weaken or destroy viable local cultures. This two-volume report identifies the potentials and dangers of using local organizations to increase the well-being of the rural poor and details how A.I.D. might design and implement projects to make effective use of these organizations. Volume I presents the results of a comparative study of local organizations, including quantitative and qualitative analyses of these results and policy recommendations for A.I.D. Volume II contains 24 detailed case studies of local organizations in Upper Volta, Cameroon, Yemen, Guatemala, Peru, the Philippines, and Jamaica.

After summarizing current thinking on the use of local organizations, the authors discuss the prevailing strategies for local organizational intervention (process, process/broker, broker, blueprint). Environmental factors – distribution of assets, agricultural production, and governmental effectiveness at the local level – are also examined. Participation by local organizations is discussed, along with the creation of multi-tiered organizational structures. Appended is information on the research methodology and bibliographies totaling 153 items (1948-79).

032

* PN-AAM-005

MF \$3.24/PC \$14.17

Urban and regional analysis for development planning

Rhoda, Richard
1982, xv, 204p. : En
511000003
AID-511-171-T
* Westview Press, Inc., 5500 Central Ave., Boulder, CO 80301

In contrast to analyses of development activities by sector (e.g., health, agriculture), urban and regional analyses study development within a country's spatial units. This report presents a wide range of methods for such spatial analyses. Each chapter concentrates on a particular issue and describes several types of analyses to solve specific problems. Emphasis is on methods using existing data rather than sophisticated forms of data collection and statistical analysis.

Urban and regional population characteristics are investigated in terms of spatial distribution analyses of development and poverty, micro analysis of beneficiary groups, and migration and urbanization. Regional analyses concentrate on a region's economic base and interregional commodity flows and on centrally located service centers. Urban analyses are directed at administration and delivery of public services, employment, land use and transport, and housing. Case studies of Panama and Costa Rica comparing methods used to analyze various development issues are presented. The text is highlighted by 10 tables and 5 figures.



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033

PN-AAL-379

MF \$1.08/PC \$4.42

Role of women as participants and beneficiaries in water supply and sanitation programs

Elmendorf, Mary L.; Isely, Raymond B.

U.S. Agency for International Development. Bureau for Science and Technology. Office of Health; Camp Dresser and McKee, Inc.

WASH field report, no.11, Dec 1981, iv, 28p. : Bibliography, p.23-28, En

9311176

AID/DSPE-C-0080

Women's multiple roles in the development process are so interrelated with effective community participation that the two factors must be analyzed simultaneously in order to develop objectives and guidelines for water supply and sanitation projects. This report, based on an extensive review of both the published and unpublished literature on the subject, argues that women should be given prime consideration in designing, implementing, and evaluating water supply and sanitation projects.

The authors analyze: the impact on project planning of women as acceptors of new technologies; the impact on project implementation of women as users of improved techniques; women's role as managers of water and sanitation facilities and the need to include them in training activities; and the implications for project evaluation of women's role as agents of change. Specific recommendations and guidelines are provided. A 5-page bibliography (1968-82) is appended.

034

PN-AAL-656

MF \$2.16/PC \$25.35

Economic participation of Egyptian women: implications for labor force creation and industrial policy; executive summary and recommendations

Papanek, Hanna; Ibrahim, Barbara

Boston University; U.S. Agency for International Development. Bureau for Near East. Egypt

Industrial sector strategy assessment, May 1982, 173p. : En

Intensified use of female labor can solve the current labor shortage in Egypt. This strategy assessment of Egypt's industrial sector analyzes and accounts for current employment biases and trends and makes recommendations for alleviating the problems encountered.

In regard to female labor in Egyptian industry, the report reviews in turn policies and issues, supply and demand, trends in small labor force participation, education-employment linkages, vocational training within industry, and supporting services and costs. It is recognized that the potential female labor force has been underutilized due to uninformed and biased industrial planning. Especially noted is the negative effect on female participation of rising educational requirements. Case studies confirming the positive effects of new strategies are presented.

General and specific recommendations are made to expand female opportunities for industrial employment by building upon women's aptitudes and opening new areas currently unavailable to women. Training should include both formal and alternative education such as apprenticeships, on-the-job-training,

and special construction skills training. Child care and other support services should be developed. Finally, a survey of women in industry should be conducted as the basis for future planning.

035

PN-AAL-777

MF \$1.08/PC \$5.85

AID policy paper: women in development

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

A.I.D. policy paper, Oct 1982, 43p. : En

A focus on the economic participation of women in development (WID) is essential to the success of A.I.D.'s policy to promote balanced economic development in the Third World. This policy paper provides a general framework and practical strategy for incorporating WID concerns into the broad spectrum of A.I.D. programs.

A brief rationale of the need for a WID policy leads to a discussion on issues affecting that policy in the areas of agricultural development, employment and income generation, human resources and institutional development, energy and natural resource conservation, and water and health. A statement of norms for including WID activities in the design and implementation of A.I.D. projects, for the operation of A.I.D.'s WID Office, and for A.I.D. collaboration with other donors in WID activities concludes the paper.

036

PN-AAL-933

MF \$3.24/PC \$31.46

Women in natural resources: an international perspective; proceedings of a conference for men and women

Stock, Molly; Force, Jo Ellen; Ehrenreich, Dixie

U.S. Agency for International Development. Bureau for Program and Policy Coordination. Office of Women in Development; University of Idaho. College of Forestry, Wildlife and Range Sciences

(Women in Natural Resources: An International Perspective, Moscow, ID, US, March 8-9, 1982)

Jul 1982, vi, 236p. : En

Little attention has been given to the varied and vital roles that women can play in natural resource development. Presented here is a compendium of 19 papers delivered at a 1982 international conference which examined the actual and potential contributions of both expatriate professional women and host country women in natural resource development projects.

The first three papers point out the challenges faced by professional women in entering and working in a foreign community. Presented next are five papers authored by women working in specific natural resource development programs, providing perspectives on the involvement of foreign professional and local beneficiary women in specific forestry, biological research, aquaculture technology, and livestock nutrition projects. The next section addresses the issue of masculine/feminine gender labeling in the natural resource professions and suggests some adaptive strategies for professional women; an ecosystems model of women's use of forest products is also presented.

Following this, seven papers examine the role of host country women in natural resource management. First, the



GENERAL DEVELOPMENT

037

PN-AAL-948

MF \$5.40/PC \$60.45

Invisible farmers: women and the crisis in agriculture

Lewis, Barbara C.

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

Apr 1981, vi, 456 : En
AID/OTR-C-147-35

Women provide a large and vital share of the labor in most Third World agricultural systems, yet they are invisible to government policymakers, historians, social scientists, and others involved in agricultural policy planning. In this monograph, eight essays by different women authors present policy recommendations to assist women in their agricultural activities.

The eight papers, taken as a whole, show why the type of development assistance currently channeled to rural women is wholly inadequate. The papers address such issues as forestry, off-farm rural employment, agricultural extension, legal status and access to land, and organizational and political resources. Each paper includes a survey of relevant research and a critical evaluation of women's economic role, as well as the impact of development processes and particular projects upon women. Each concludes with proposals for altering project design and execution in order to fully integrate women into rural development, and each provides a bibliography of recent research.



Women should be given prime consideration in designing, implementing, and evaluating water supply projects.

Political economy of subsidizing agricultural credit in developing countries

Kane, Edward J.

World Bank. Economic Development Institute; Ohio State University; U.S. Agency for International Development (Colloquium on Rural Finance, Washington, DC, US, 1-3 Sep 1981)

1981, 20p. : References, p.20, En Discussion paper no.2

Spanish version: PN-AAL-828

9311169

AID/TA-BMA-7

The intended effect of subsidized agricultural credit programs, according to this report, is thwarted by political and economic forces which collide in the process of regulation, circumvention, and re-regulation.

Regulation generally aims at promoting the redistribution of wealth from politically weak to politically powerful sectors, e.g., as when domestic politicians sabotage the intended use of funds provided by international donors to agricultural development banks. In response, the economically powerful attempt to circumvent the burdens placed on them by politically motivated regulations by seeking price stabilization (the "law of one price") over preferential explicit borrowing rates. Arbitrage pressures are thereby set loose which eventually offset the gap between market rates of interest and explicit interest rates, by forcing implicit interest rates - either through lawful nonpecuniary compensation to the credit institution or through illegal bribes to loan officers - to be paid. Eventually, a program's intended beneficiaries, who are often less willing or able to offer implicit interest, are barred from access to program funds. Circumvention, in turn, leads to re-regulation, as external donors and domestic politicians attempt to close loopholes in the original regulation. Because of the unpredictability of the timing and details of circumvention schemes and because of differences in regulator and regulatee ability to adapt to opportunity changes due to exogenous economic forces (e.g., changes in inflation rates), re-regulation tends to transform an initially simple and limited regulatory system into a complex and wide-ranging network of government interference. This interference, in turn, leads to economic waste, social ills, and distributional inequity that feeds political demands for new approaches.

On the policy level, donors and recipients alike must: learn to work with, rather than against, financial market forces; emphasize schemes to improve opportunities for risk-bearing and to develop both sides of lending-institution balance sheets; and above all, avoid interfering with incentives for financial intermediaries (e.g., development banks) to diversify risks, maintain viable rates of loan repayment, and absorb rural savings.

Are the arguments for cheap agricultural credit sound?

Adams, Dale W.

World Bank. Economic Development Institute; Ohio State University; U.S. Agency for International Development (Colloquium on Rural Finance, Washington, DC, US, 1-3 Sep 1981)

1981, 28p. : References, p.27-28, En Discussion paper no.1

Spanish version: PN-AAL-824

9311169

AID/TA-BMA-7

The provision of cheap agricultural credit (CAC), a common practice in developing countries, leads to inefficient resource allocation, concentration of income, and poor rural financial market performance. So concludes the author of this report after refuting eight arguments used to justify CAC.

(1) The religiously-based usury argument is economically unfounded. Informal lenders do not regularly receive returns much beyond their costs and the value of their services is attested by widespread use; the contribution of banks to rural development would be severely limited if they could not charge interest. (2) Reference to the role of CAC during the U.S. depression ignores the fact that prices were then declining, resulting in extremely high real interest rates. (3) The arguments that lenders get cheap money ignores the opportunity costs of money, loan default and other risks, and the fact that many lenders lose money on farm loans, especially to the poor. (4) Deregulating interest rates would not harm the viability of most farm credit agencies, since they have few medium- and long-term loans in their portfolios. In many countries, interest rate ceilings make it impossible for formal lenders to cover their costs; raising interest rates would strengthen rather than undermine lender viability. (5) The use of CAC as an incentive to farmers ignores two facts: that cheap money is not always cheap (due to borrower costs) and reduces lender ability and willingness to provide quality services; and that farmers, due to price and yield uncertainties, only borrow when they expect substantial returns. (6) Using CAC to transfer income to the rural poor does not work, as most of these loans are made to large borrowers and thus are very regressive. (7) There is more reason to assume that high interest rates dampen rather than fuel inflation, since they can help financial markets mobilize savings, slow the growth of the money supply, increase consumption alternatives and thus reduce price pressures, and increase production by increasing access to rural markets. (8) Employing CAC to offset the adverse production and equity effects of taxes ignores the regressive nature of CAC and its inefficiency in addressing the equity question.

040

PN-AAJ-966
MF \$1.08/PC \$4.29

Interest rate policies, agricultural credit and income distribution in Latin America

Gonzalez-Vega, Claudio

World Bank. Economic Development Institute; Ohio State University; U.S. Agency for International Development (Colloquium on Rural Finance, Washington, DC, US, 1-3 Sep 1981)

1981, 32p. : References, p.27-32, En Discussion paper no.3 9311169

AID/TA-BMA-7

Low interest rate ceilings in Latin America, generally considered a panacea for the poor farmer, have actually harmed the small farmer and – with 80% of loan funds going to 3% of farm producers – exacerbated an already unequal distribution of wealth. So concludes this report on the impact of interest rates on income distribution in Latin America.

The author argues that underpricing credit affects income distribution in two ways. First, ceilings create for borrowers a subsidy directly proportional to the loan size. The effect of subsidization is regressive. Large borrowers get large loans and receive a substantial subsidy; small borrowers receive small loans and a smaller subsidy; non-borrowers, usually the smallest producers, receive no subsidy.

Second, low interest ceilings create excess demand for credit, forcing lenders to develop a non-price means of rationing loans. Although it is intuitively believed that such rationing reduces the size of the lender's loan and asset portfolios and channels loans to less risky borrowers, conventional economic models do not indicate if all classes of borrowers are equally affected or if any borrowers do in fact benefit. The author therefore reviews several theories of non-price credit rationing which are based on the theory of the firm and on portfolio theory, and develops a simple model to demonstrate the mechanism by which rationing processes favor larger, safer, long-standing borrowers at the expense of smaller, riskier, newer borrowers.

The author highlights one such device popular in Latin America, credit limits *avios* based on the size of area cultivated and on the crop grown. Such limits have favored commercial (safe) over subsistence (risky) growers and have been prey to political pressure by large borrowers, thereby lending support to the "iron law of interest rate restrictions" which states that as an interest ceiling becomes more restrictive the size of loans to non-rationed, larger producers increases and the size of loans to rationed, smaller producers decreases. A list of 73 reference (1961-81) in English and Spanish is appended.

041

PN-AAJ-967
MF \$1.08/PC \$4.16

Savings and credit arrangements in the informal financial market of developing countries: observations from Sri Lanka

Bouman, F.J.A.

World Bank. Economic Development Institute; Ohio State University; U.S. Agency for International Development (Colloquium on Rural Finance, Washington, DC, US, 1-3 Sep 1981)

1981, 31p. : References, p.30-31, En Discussion paper no.4 9311169

AID/TA-BMA-7

Given the growing consensus that the institutional financial sector has failed to meet the needs of the rural poor, the long-standing systems of informal saving and borrowing found throughout the developing world deserve further attention and support. Toward this end, this paper analyzes informal savings and credit arrangements in rural Sri Lanka.

Refuting conventional wisdom, the author opens by arguing that the poor do indeed save – in cash, goods, and debt claims; with pawnbrokers, merchants, and money lenders; and at home and in groups. Thrift is natural among those who must cope with irregular cash flows.

The author emphasizes group saving – through pilgrimage societies, saving clubs, death aid societies, and rotating savings and credit associations (ROSCA's or *cheetus*) – as having several advantages over saving individually. Such institutions help avoid embarrassing claims of relatives and friends, are safe depositories, enhance the discipline to save, and provide members with a variety of economic benefits. Although seldom paying interest, savings groups are the preferred vehicle because they are accessible, flexible, familiar, and make loans readily. The operation and membership of *cheetus*, the most popular form of group saving, are discussed at length.

The author cautions policymakers against disrupting informal financial markets. The experience of the People's Bank of Sri Lanka shows how capital drained from the rural sector is channeled into the formal capital market, which is sensitive to risk and cost accountancy and seldom performs in the interest of entrepreneurs, farmers, traders, and craftsmen. The author contends that such net outflows of credit from the rural sector are not uncommon. The author also notes that informal lenders are quick to meet a new need as it arises and cites a Philippine case study to support this idea.

To integrate the formal and informal financial sectors without unduly disrupting the latter, the author recommends removing adverse legal restrictions on informal lenders (since no reliable data exist on their practices) and tapping them as conduits to fund small farmers and entrepreneurs. An 18-item bibliography (1962-81) is appended.

042

PN-AAJ-968
MF \$1.08/PC \$3.12

Working capital, rural nonfarm firms and rural financial markets

Kilby, Peter; Liedholm, Carl; Meyer, Richard L.

World Bank. Economic Development Institute; Ohio State University; U.S. Agency for International Development (Colloquium on Rural Finance, Washington, DC, US, 1-3 Sep 1981)

1981, 28p. : En Discussion paper no.5 9311169

AID/TA-BMA-7

Rural nonfarm firms' need for working capital is often overlooked in the analysis of rural financial markets. This paper documents the diversity of rural commercial activities in developing countries, examines the effect of these activities on the supply of and demand for working capital, and recommends policies to increase market responsiveness to the short-term credit needs of these firms.

The authors stress the important relationship between small rural enterprise and the short-term capital market, noting that: lack of capital is a major constraint; capital markets have poorly served the rural nonfarm sector; short-term capital is relatively more important than long-term credit to the small entrepreneur.

neur; and short-term credit operations could be both efficient and profitable for the lender.

The authors proceed to investigate the level and composition of working capital in rural manufacturing enterprises; analyze the demand for working capital as a function of volume of sales, capital intensity, length of the production period, scale of production, risk, managerial efficiency, and the cost of borrowing; and examine the supply of short-term finance.

Based on their findings, the authors formulate and test a model of demand for working capital using data from small enterprises in Sierra Leone. Inventory – the principal component of working capital – is the major dependent variable. Of the independent variables, level of sales and economic profits are important, and type of industry (e.g., carpentry, baking, tailoring) is statistically significant; location (rural/urban) is not significant.

The evidence suggests that a substantial proportion of rural nonfarm activities are economically viable and are thus generating a strong demand for working capital. It is the lack of short-term credit which is constraining their activities. Recommended to alleviate this problem are: (1) reductions in the administrative cost and risk of lending; (2) removal of market imperfections and greater integration of the rural financial market; (3) more flexible loan terms; and (4) greater experimentation with informal sources of short-term credit. A 37-item bibliography (1952–81) is included.

043

PN-AAJ-969

MF \$1.08/PC \$4.29

Savings mobilization: the forgotten half of rural finance

Vogel, Robert C.

World Bank. Economic Development Institute; Ohio State University; U.S. Agency for International Development (Colloquium on Rural Finance, Washington, DC, US, 1–3 Sep 1981)

1981, (32p.) : En Discussion paper no.6

9311169

AID/TA-BMA-7

Low interest rate policies, pursued by many developing countries at the expense of savings mobilization, have generally failed to achieve their goal of increasing agricultural production and redistributing income toward the rural poor. This paper explains the importance of savings mobilization and describes the success of a project in Peru.

The authors argue that savings mobilization: (1) is a more effective tool for redistributing income to the rural poor than are subsidized loans, which inevitably favor wealthier farmers; (2) draws resources away from unproductive investments; (3) increases the viability and utility of rural financial institutions; and (4) provides incentives and discipline so that rural financial markets can be used to their best advantage by governments and international donors.

To support his view, the author details the success of a 2-year savings mobilization project implemented by Peru's Banco Nacional para las Cooperativas (BANCOOP) in 1979, a time of rapid inflation, no real economic growth, and weakened credit unions. By the end of 1980, BANCOOP had mobilized over \$900,000 in savings – six times its goal – and expanded its lending operations. The cost of mobilizing the deposits was far less than the interest earned on resulting loans. Factors responsible for BANCOOP's success included high interest

paid to savers, employee incentives, and advertising campaigns involving gifts and contests.

Although BANCOOP provided credit unions with technical assistance, the unions failed to mobilize significant savings because they were reluctant to adopt the higher interest rates vital to successful savings mobilization. Nonetheless, credit unions do have the potential to serve the rural poor, and it is recommended that more credit unions be provided adequate incentives. Further, government agencies and international donors should supplement rural resources in ways which encourage rather than impede savings mobilization. A list of 27 references (1973–81) is provided.

044

PN-AAJ-970

MF \$1.08/PC \$4.16

Costs of credit delivery, the institutional structure of rural financial markets and policies to reach more small farmers with credit programs

Ladman, Jerry R.

World Bank. Economic Development Institute; Ohio State University; U.S. Agency for International Development (Colloquium on Rural Finance, Washington, DC, US, 1–3 Sep 1981)

1981, 26p. : En Discussion paper no.7

9311169

AID/TA-BMA-7

To determine the role of transaction costs (TC) in rural credit systems, this paper reviews the reasons for the high TC's of agricultural development banks (ADB's) as opposed to moneylenders; develops models of lender and borrower behavior and the influence of this behavior on rural financial markets; and cites a Bolivian case study to support his conclusions.

It is shown that borrower and lender TC's, and not interest rates alone, determine the behavior and structure of rural financial markets. The high TC's of ADB's exclude some farmers from borrowing and encourage both lenders and borrowers to negotiate larger loans, regardless of the interest rate. By contrast, low TC's make loan size relatively unimportant for moneylenders. TC's explain why several credit institutions can exist side-by-side – ADB's catering to farmers wanting larger, long-term loans, and moneylenders serving farmers with more modest needs. It is also shown that raising low ADB interest rates, as is often urged, would cause more farmers to seek out moneylenders unless farmer TC's were also lowered.

Five reasons for high TC's are examined. In determining borrower credit worthiness, providing internal control, and educating farmers, both borrowers and lenders must follow complex procedures and complete extensive paperwork. This burden could be reduced, e.g., by using the well-attested peer pressure principle to establish borrower credit worthiness, by increasing ADB offices in remote areas to reduce farmer commuting costs, or by having extensionists educate farmers. TC's are also designed to be high to create work for large numbers of ADB employees; government confrontation with the interests of these workers could lower TC's. A fifth reason that TC's are high, to ration credit and reduce the total level of TC's, especially where concessionary interest rates lead to low ADB revenues, excludes many farmers from ADB credit and leads to larger and longer term loans. In such a case, a policy of raising interest rates and lowering TC's will be needed.

045

PN-AAJ-971
MF \$1.08/PC \$4.42

Problems with supply-leading finance in agricultural development

Bourne, Compton; Graham, Douglas H.
World Bank. Economic Development Institute; Ohio State University; U.S. Agency for International Development (Colloquium on Rural Finance, Washington, DC, US, 1-3 Sep 1981)
1981, 33p. : References, p.31-33, En Discussion paper no.8 9311169
AID/TA-BMA-7

Although governments have established development banks and related credit programs to service a variety of agricultural development goals, the performance of these credit institutions and programs – and the validity of the underlying strategy of supply-leading finance – is weak. This report appraises this prevailing strategy and proposes several reforms.

Supply-leading finance seeks to transfer resources to and stimulate entrepreneurial responses within the modern growth sectors of the economy. Thus, agricultural credit institutions are created on the premise that they are effective tools of modernization and social change. However, evidence indicates that it is marketing conditions and price policies, not credit (and especially not long-term credit), which impede growth in farm income. Further, the justifications for low interest rates (e.g., improved income distribution, introduction of new techniques) are outweighed by the destructive effects of low rates – namely, the diversion of attention from the true problems (e.g., low rates of return in agriculture) and appropriate remedies (e.g., direct subsidies, market reforms).

It is therefore not surprising that most supply-leading credit institutions lack adequate deposits, rely on donor or host government funds, are poorly managed, supervise credit too closely, and are susceptible to political interference. They are plagued by operational problems such as irregular financial flows, loan costs not covered by interest rates, use of reserves and new capital to defray operating costs, slow loan appraisal and disbursement, high delinquency and default rates, and use of a planner's rather than a banker's approach to credit.

The authors urgently propose that agricultural credit institutions: (1) offer a full range of financial services; (2) use deposit facilities and bond issues to mobilize local resources and acquire information on borrowers; (3) raise loan rates to cover costs, especially in the face of inflation; (4) reduce lending costs by increasing staff responsibility and accountability; and (5) improve loan appraisal systems and ensure sanctions against those who default. Governments should use direct rather than credit subsidies for the farm sector, reduce inflation, and support realistic product and input prices. A 27-item list of references (1966-81) is appended.

046

PN-AAJ-972
MF \$1.08/PC \$7.54

On the iron law of interest rate restrictions: the rationing behavior of financial institutions matters

Gonzalez-Vega, Claudio
World Bank. Economic Development Institute; Ohio State University; U.S. Agency for International Development (Colloquium on Rural Finance, Washington, DC, US, 1-3 Sep 1981)
1981, 57p. : References, p.56-57, En Discussion paper no.9
Revised version: PN-AAN-113
9311169
AID/TA-BMA-7

Formal financial institutions (FFI) in low-income nations, legally bound to provide to high-risk small farmers loans regulated by restricted interest rates (RIR), mitigate risks by rationing loans to wealthier farmers, thus worsening income distribution in rural areas. So argues the author of this paper examining the impact of RIR's on borrowers and especially on lenders in low-income countries.

A survey of traditional models for determining the impact of RIR's reveals that while these models correctly indicate that borrowers suffer from RIR's, they fail to specify or stratify the extent of harm. According to the author, the effect of RIR's is to reduce both the size of FFI's total portfolio of assets (which in turn reduces their ability to borrow from other financial intermediaries) and FFI loan portfolios, and to concentrate the allocation of FFI loans in favor of a smaller and wealthier class of farmers. Other effects of RIR's are that FFI's either change the non-interest terms of the loan (e.g., collateral) or reduce loan size.

After reviewing types of non-price credit rationing used by lenders, (e.g., favoring export-oriented crops), the author develops his own model of lender/borrower behavior under RIR's as summarized in the Iron Law of Interest Rate Restrictions: As interest ceilings become more restrictive, the size of loans granted to large producers increases while those to small producers decreases. Further, when RIR's fall so low that they no longer cover the average variable costs of lending to small borrowers, FFI's close their rural offices, thus increasing small farmers' transaction costs of securing a formal loan and forcing them into the high-cost informal credit sector. Finally, recognizing the hesitation of FFI's to offer them credit, the majority of small borrowers do not apply for loans, thus creating the illusion of a lack of demand for credit when in fact many small farmers both desire and would benefit from FFI loans. In this way, it is concluded, RIR's have become key determinants of the limited access to institutional credit and of the high degree of loan portfolio concentration that characterize rural financial markets in low-income countries.

A 23-item list of references (1952-81) is appended.

047

PN-AAJ-973

MF \$1.08/PC \$3.64

Redistribution in reverse: cheap credit cannot redistribute income in favor of the small farmer

Gonzalez-Vega, Claudio

World Bank. Economic Development Institute; Ohio State University; U.S. Agency for International Development (Colloquium on Rural Finance, Washington, DC, US, 1-3 Sep 1981)

1981, 27p. : En Discussion paper no.10

Revised version: PN-AAN-112

9311169

AID/TA-BMA-7

Do the low interest rates charged by formal financial institutions (FFI) in low-income countries effectively redistribute income? Pointing to the limited access of borrowers to FFI credit and FFI's highly concentrated loan portfolios (3% of agricultural producers in low-income countries have access to 80% of the credit), this discussion paper explores the direct and indirect effects of low interest rates on rural borrowers and argues that such rates actually promote the concentration of wealth.

The author employs a simulation model to illustrate how large and small holders, respectively, will, after 5 years in the same economic environment, accumulate radically different levels of wealth in both absolute and relative terms precisely because the level of credit received is a function of the size of borrower holdings. Furthermore, the inflexibility of low FFI interest rates, and interest rate differentials which do not reflect the costs and risks attendant on lending to different classes of borrowers, imply a subsidy - which can be quite substantial - to the relatively few who receive FFI loans. Such subsidies have a directly negative effect on income distribution. Further, the high amounts loaned to large borrowers by FFI's are collected through the "inflation tax" on savings, the majority of which are provided by the poor, thus leading to a situation in which the poor majority who are precluded from loans actually transfer wealth to a few privileged borrowers. Low interest rates have an indirect negative effect on income distribution because, whether they are due to decree, government regulation, or inflation, they cause FFI's to redistribute their loan portfolios in favor of large, safe, and well-known borrowers, thus excluding small, high-risk borrowers from access to credit.

In fine, the author argues that credit in general and low interest rates in particular are poor mechanisms for redistributing income. They are inefficient because the same redistribution could be achieved at less social cost by other means. They are ineffective because, in the real world, they tend to redistribute income in reverse, promoting the concentration of both credit and wealth.

048

PN-AAJ-974

MF \$1.08/PC \$6.24

Critique of traditional agricultural credit projects and policies

Adams, Dale W.; Graham, Douglas H.

World Bank. Economic Development Institute; Ohio State University; U.S. Agency for International Development (Colloquium on Rural Finance, Washington, DC, US, 1-3 Sep 1981)

1981, 46p. : References, p.34-46, En Background paper no.1

Also in *Journal of Development Economics*, v.8, 1981

9311169

AID/TA-BMA-7

Although over \$5 billion has been spent in the past several decades on rural financial market (RFM) projects in developing countries, the emphasis of these projects on loans to stimulate productivity and to help the poor has diverted attention from the basic role which RFM's ought to play in development. This report critiques the results, assumptions, and policies associated with agricultural credit projects in low-income countries; summarizes new perspectives on RFM's; and makes suggestions for improving RFM projects.

Many agricultural credit projects have replicated developed country financial institutions and shared common assumptions about saver-borrower behavior, lender behavior, and RFM performance. Recent research has demonstrated many of these assumptions to be weak or incorrect. A number of problems common to RFM projects stand out - the scarcity of medium- and long-term formal credit, high loan transaction costs, and serious loan repayment problems. RFM policies have been ineffective in allocating a larger share of formal loans to agriculture in general and to the rural poor in particular. More seriously, RFM operations in most countries are causing inefficient resource allocation, concentrating income and asset ownership, and diverting financial resources from agriculture. On a broader scale, cheap agricultural credit has generated inflationary pressures and diverted resources from vital programs such as agricultural research and basic infrastructural development.

An awareness of these problems has helped create a new perspective on RFM's, a key element of which is the identification of the expected real rate of interest as a major determinant of borrower, saver, and lender behavior. Suggestions made for improving RFM projects include: (1) offering more flexible nominal rates to maintain relatively stable and positive real interest rates; (2) more attractive incentives for savers and the mounting of major saving mobilization schemes; (3) less attention on building new credit institutions; (4) and an end to the view among RFM project designers and policy-makers that loans are inputs similar to labor, fertilizer, or seeds. Appended is a list of 91 references (1942-80).

049

PN-AAJ-975
MF \$1.08/PC \$1.17

Fungibility and the design and evaluation of agricultural credit projects

Von Pischke, J. D.; Adams, Dale W.

World Bank. Economic Development Institute; Ohio State University; U.S. Agency for International Development (Colloquium on Rural Finance, Washington, DC, US, 1-3 Sep 1981)

American journal of agricultural economics, v.62(4), Nov 1980, p.719-726 : En Background paper no.2 9311169

AID/TA-BMA-7

While rural financial markets in many developing countries are performing poorly, the agricultural credit projects within these markets are often judged to be doing well. This paper attempts to resolve this apparent paradox by showing how project design and evaluation procedures which ignore fungibility lead to faulty conclusions about the results of agricultural credit projects.

The fungible nature of modern currency (i.e., the quality of being uniformly interchangeable) makes credit activities difficult to evaluate since reasons given to justify a loan may be unrelated to the activities actually stimulated by the additional liquidity the loan provides. To understand the problems fungibility poses for credit projects, one must also consider additionality, the changes created by the project; substitution, the degree to which project resources replace local resources; and diversion, the use of project credit for unauthorized purposes.

Illustrative case studies of a farm household in Africa, a credit agency in Asia, and a Latin American country are presented. The authors conclude that it is difficult if not impossible to determine the impact of credit at the farm level. At the national and lender levels, substitution and diversion flourish in an environment characterized by distorted exchange rates, balance of payments problems, rigid interest rate policies, and substantial inflation coupled with negative real rates of interest.

The authors stress that it must be recognized that loans provide additional liquidity which tends to flow to the most attractive use; the impact of credit must be viewed in terms of rural financial market performance; and that projects alone may not be the most effective means for ameliorating problems in these markets. Thus, the focus of project design and evaluation should shift from the demand for to the supply of farm credit. Less emphasis should be given to measuring the impossible (i.e., the farm-level impact of credit) and more attention should be accorded that which can be documented (i.e., the performance of rural financial markets). A list of 14 references (1966-79) is appended.

050

PN-AAJ-976
MF \$1.08/PC \$2.99

Research on rural savings in India

Desai, B.M.

World Bank. Economic Development Institute; Ohio State University; U.S. Agency for International Development (Colloquium on Rural Finance, Washington, DC, US, 1-3 Sep 1981)

1981, 22p. : References, p.18-22, En Background paper no.3 9311169

AID/TA-BMA-7

Although a good deal of research has been done on rural savings in India, most of it has focused on the ability to save, thereby neglecting and thus discounting the importance of the incentives to save. This paper reviews research on the volume of savings in rural India, critiques the Reserve Board of India's estimates of rural household savings, and presents suggestions for future research.

Testing the incentive to save hypothesis involves conceptual, methodological, and data problems, especially in terms of measuring expected rate of return on savings and its impact on the volume of savings. Only two studies - valuable but methodologically flawed - have attempted to measure incentives to save. One showed that rural savings responded positively to interest rates; the other showed that savings of subsistence households grew with increased investment opportunities while savings of nonsubsistence households decreased. The author faults the Reserve Board for severely underestimating rural savings. Their estimates reflect arbitrary adjustments, exclude non-monetized savings and investment, and overemphasize concepts of net savings. Re-estimation of savings for the period from 1951-52 to 1958-59 showed increasing Reserve Bank underestimation of rural savings.

Based on a review of the literature, the author notes that economists assume rural households: have a small and/or stagnant ability to save; are homogeneous in their cash-flow profile; save only when their incomes increase; do not respond to savings incentives; have an interest-elastic demand for credit but interest-inelastic savings; and base their saving activity on irrational decisions. The author argues that testing these assumptions requires incorporating both ability-to-save and incentive-to-save hypotheses, a task possible for macro and micro savings data. Future research, however, should be conducted where returns to saving are changing (e.g., in areas witnessing technological changes or having pilot savings mobilization programs). A list of 62 references (1946-80) is included.

051

PN-AAJ-977
MF \$1.08/PC \$3.90

Improving donor intervention in rural financial markets

Von Pischke, J. D.

World Bank. Economic Development Institute; Ohio State University; U.S. Agency for International Development (Colloquium on Rural Finance, Washington, DC, US, 1-3 Sep 1981)

1981, 28p. : References, p.26-28; revised version, En Background paper no.4 9311169

AID/TA-BMA-7

To alleviate problems such as low repayment levels and high institutional costs caused by the faulty design of current donor-supported farm credit programs, this report proposes an alternative approach aimed at increasing farmer repayment or debt capacity (DC) and creating confidence in the borrower-lender relationship.

To ascertain borrower DC, use of the normal year assumption is insufficient; rather, one should use the borrower's normal uncommitted cash flow as adjusted in view of senior claims upon the borrower and the impact of reasonably expected adversity. To promote borrower-lender confidence, several issues should be determined: what services lenders can provide to create longstanding relationships with borrowers; the

commercial value to the lender of accurate and timely information about borrowers and potential borrowers; and the role of voluntarism, as opposed to coercion, in rural development strategy.

To promote DC, risk-reducing measures should be taken, such as improving technology to allow more production or less expensive production; developing local infrastructures such as roads, storage facilities, and telephones; and modifying government policy and practices that upset real market relationships (e.g., price setting, monopoly purchasing). A proper role for government could be to make land tenures more secure, conduct farmer education, or promote collective guarantees through collective aggregation of risks. Financial measures such as lengthening times for loan repayment, expanding the services of intermediaries (banks, credit unions), and ensuring flexible lending and repayment schedules would serve to reduce risks and thereby increase the availability of credit.

The DC approach would greatly alter donor credit interventions by: refusing to use credit inappropriately, e.g., to promote high-risk technologies; strengthening institutional financial viability; viewing credit not as an input, but rather as one of several variables, e.g., costs of delivery, real interest rates, in the process of financial intermediation; and finally, by viewing the function of the rural financial market as the development and exploitation of rural DC, which would be accepted as a proxy for development.

052 **PN-AAJ-978**
MF \$1.08/PC \$4.55

Role of finance in rural development

Ray, Edward John

World Bank. Economic Development Institute; Ohio State University; U.S. Agency for International Development (Colloquium on Rural Finance, Washington, DC, US, 1-3 Sep 1981)

1981, 34p. : References, p.33-34, En Background paper no.5 9311169

AID/TA-BMA-7

Since financial reform in developing countries has been neither general nor sweeping, it is important to know if the partial reforms which have been implemented can have any positive impact. This report reviews, evaluates, and then rejects the various arguments made for central planning and regulation of the economy - and hence against market liberalization - in developing countries.

The author first summarizes the potential role of financial intermediation in achieving rural development in the context of the free market. Emphasized are the role of financial intermediaries' in promoting efficient resource use, providing management services to savers and lenders, reducing the concentration of wealth and income, and in making financial markets less subject to politicization.

Next, the author discusses the real world financial market distortions common in many developing countries. Within the context of a simple two-country, two-commodity, two-factor model, he assesses the economic arguments put forth for production taxes and subsidies to deal with production externalities, for tariffs to deal with deteriorating terms of trade, and for capital and labor taxes and subsidies to deal with financial market fragmentation.

The author presents an optimal financial strategy characterized by slower monetary growth, higher taxes, reduced government spending and regulation, trade liberalization, currency depreciation, and the removal of domestic price controls.

However, he concedes that since the benefits of such reforms are diffuse and because the losses fall on those who derive economic and thus political power from existing market distortions, reforms tend to be piecemeal. To assist developing countries to overcome these obstacles, it is recommended that donors promote the creation or deregulation of financial markets; help mobilize rural savings; provide short-term subsidies to rural branches of commercial banks; and offer low-interest loans to governments committed to market liberalization and fiscal and financial reform.

A 14-item list of references (1966-81) is appended.

053 **PN-AAK-496**
MF \$1.08/PC \$6.11

Cooperative development in the Democratic Republic of the Sudan

Committee for the Promotion of Aid to Cooperatives

Cooperative information note, no.1, Dec 1980, iii, 37p. + annex : En

Although Sudan's 4,000 cooperatives dominate no sector of the economy, they nevertheless play an important role in distributing essential consumer commodities and in mobilizing the poor. This report summarizes the status of cooperative development and the operation of cooperatives in Sudan's Northern and Southern Regions.

In the Northern Region, cooperatives exist for consumers; flour milling; agriculture (including cooperatives in the areas of livestock, fisheries, irrigated farming, and mechanized and traditional rainfed agriculture); industry; transportation; and housing. Described are cooperative leadership, national cooperative bodies, Sudanese Government and Party support of the cooperative movement, cooperative training, and cooperative finance. The role of external development assistance given by the International Labor Organization, United Nations, World Bank, and A.I.D. to support cooperatives in Khartoum, Northern Kordofan, and Blue Nile is also highlighted.

Cooperatives in the more remote and underdeveloped Southern Region are fewer, more geographically concentrated, and have focused on the distribution of essential consumer goods and on the marketing of crops and important agricultural inputs; handicraft and fisheries cooperatives are being encouraged. Reviewed are government and party support of cooperatives, cooperative training, and donor assistance from the World Bank, the United Nations, the International Labor Organization, and the Governments of West Germany and Norway.

Summary data on cooperatives in the two regions are given throughout the text and in three appendices.

054 **PN-AAL-286**
MF \$1.08/PC \$2.47

Concepts and methods for estimating incomes in village studies in semi-arid tropical India

Singh, R.P.; Asokan, M.

International Crops Research Institute for the Semi-Arid Tropics

Economics program progress report, no.28, Nov 1981, 18p. : References, p.11, En

Rural income serves as both a barometer of the impact of new technologies on agricultural development and a determinant of the pace of that development. This paper describes

concepts and methods used in the International Crop Research Institute for the Semi-Arid Tropics's Village Level Studies (VLS) to estimate income in the semi-arid tropics of India.

First, the paper outlines a conceptual framework for income estimation based on five definitions of farm income: household income, gross farm income, total farm expenses, net farm income, and net returns to capital and management. Next, factors complicating income estimation are reviewed. Among them are the lack of daily transaction records, the non-monetary nature of many farm transactions, varying irrigation costs, intercropping, and complicated tenancy and institutional arrangements. Finally, procedures are presented for estimating the costs of seed, labor, machinery, fertilizers and pesticides, land revenue and taxes, livestock inputs, crop and livestock outputs, depreciation, and other expenses.

Appended are a list of 11 references (1975-80), a list of definitions used in the VLS income analysis, and a detailed description of data sources.

055

PN-AAL-299

MF \$1.08/PC \$4.68

Guidelines for estimating employment generation through shelter sector assistance

Strassmann, W. Paul

Michigan State University. Housing in Development Unit; U.S.

Agency for International Development. Bureau for

Development Support. Office of Urban Development

Jan 1980, 35p. : En

9311090

AID/DS-otr-C-0012

To produce guidelines for generating employment through shelter construction, this report statistically analyzes six critical variables - wages for unskilled and skilled workers, the payroll, the components constructed, the size of the construction firm, and the construction technology employed. Relevant literature and 24 surveys in six countries were reviewed.

It is concluded that the most efficient yet labor-intensive commercial method of shelter construction in developing countries is probably the use of conventional methods by medium-sized builders to construct a few hundred dwellings per year. The amount of employment generated by alternative designs and construction methods can be estimated if the wage rate for skilled and unskilled workers and the proportion of each type of worker are known. Cost breakdown among materials, off-site costs, and wages, and by major building component increases the accuracy of employment estimates. Appended is the derivation and explanation of an employment generation formula.

056

PN-AAL-326

MF \$2.16/PC \$21.58

Description of the household composition and income files created from the INCAP-Rand Guatemalan survey data

Clark, Carol M.

Rockefeller Foundation; U.S. Agency for International

Development. Bureau for Program and Policy

Coordination. Office of Policy Development and Program

Review; Rand Corp.

Rand note, N-1625-RF/AID, Apr 1981, ix, 159p. :

Bibliography, p.159, En

9300088

AID/OTR-G-1822

In order to summarize economic and demographic data collected in Guatemala in 1974-76 by the Institute for Nutrition in Central America and Panama (INCAP) in collaboration with the Rand Corporation, six computerized data files were created. This report describes in detail these files so that researchers interested in Guatemala may have access to this store of data.

The files were created using the Statistical Analysis System (SAS). The KID000 and PAR000 files contain socioeconomic and demographic data on individuals; the CENNUC and CENEXT files contain household size and composition data on the nuclear and extended family, respectively; and the INCOME10 and INCEXT files contain income/wealth data for the nuclear and extended family. The report also describes each variable, detailing input variables, formulas, code values, and problem cases. The mean values of the variables and a list of contents of each of the six SAS files are included.

057

PN-AAL-378

MF \$2.16/PC \$23.92

Encouraging the private sector in Somalia

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

Somalia; Berg (Elliot) Associates

Sep 1982, v, 177p. + annexes : En

6980135

AFR-0135-C-00-2045-00

Slow growth and an overburdened bureaucracy were precursors to an economic crisis that led the Government of Somalia (GOS) to abandon its 1970's experiment with "scientific socialism". This report, intended to help the GOS define strategies to stimulate growth in the private sector, examines poor past economic performance; the general environment for the private sector; and recent liberalization and privatization efforts and their impact on agriculture, settlements, and on agreements with the International Monetary Fund.

Ultimately, the authors propose macroeconomic strategies, including deregulation of marketing and construction, which support recent currency devaluation aimed at reducing privately held foreign exchange. Also urged are a reduced role for state controlled trading monopolies and greater free private trade in foodgrains. Cooperatives should be democratized and divorced from the GOS; corporate and investment laws rewritten; and development projects decentralized and reoriented toward strengthening the private sector. Appended are 33 tables supporting textual analysis and describing economic activity.

058

PN-AAL-395

MF \$2.16/PC \$13.65

Food consumption behavior: rural Sierra Leone and Kano State, Nigeria

Smith, Victor E.; Strauss, John; et al.
Michigan State University. Department of Agricultural
Economics; U.S. Agency for International Development.
Bureau for Africa. Sierra Leone
MSU rural development series: working paper, no.24, 1982,
x, 191p. + annex : En
9311315 40
AID/DSAN-C-0008

The study reported herein had two goals: to analyze the effects of economic policies on food consumption in semi-subsistence households; and to obtain data on food consumption patterns and determinants. The authors applied both single equation regressions and household-firm systems analysis to data collected during 1974-75 in Sierra Leone and Kano State, Nigeria.

The first five chapters deal with Sierra Leone and cover estimating food consumption, food consumption patterns, single-equation regressions, systems estimation of the household-firm model, and food flows and simulations. The sixth chapter covers the Kano State village data and a final chapter details conclusions.

Results show clearly that semi-subsistence households respond to economic factors. For most foods, consumption rises as household expenditures increase. Cassava may be an exception in Sierra Leone; sorghum is an exception for over half of the households in the Kano State sample. The authors suggest that efforts to improve the nutritional status of low-expenditure households should emphasize increased production of foods, such as cowpeas, that people wish to eat more of as their income increases. A discussion of data requirements for conducting similar analyses is appended.

059

PN-AAL-403

MF \$1.08/PC \$11.05

Cooperative System in Costa Rica

U.S. Agency for International Development. Bureau for Latin
America and the Caribbean. Costa Rica; Agricultural
Cooperative Development International
Aug 1982, 64p. + 6 annexes : En
PDC-0100-I-03-2067-01

To determine the potential of Costa Rican cooperatives to respond to recent government statements stressing their importance in promoting economic democracy, this report examines the legal framework of the cooperative system; describes the Costa Rican financial system and cooperative finance; and analyzes three national cooperatives - the Costa Rican Bank for Cooperation (BANCOOP), the National Institute for the Development of Cooperatives (INFOCCOP), and the National Council of Cooperatives (CONACOOOP) - as well as other key organizations and secondary and primary cooperatives.

The authors conclude that the Costa Rican cooperative system is one of the nation's best alternatives for organizing and achieving economic development. Recommendations for making the cooperative system even more dynamic and socially relevant include: ensuring that cooperatives develop as viable commercial enterprises; promoting greater coordination between various cooperative organizations; preparing a cooperative development plan; defining capitalization alternatives;

and making greater use of foreign technical expertise. The text includes 22 tables; background information on Costa Rica and rural credit are among the annexes.

060

PN-AAL-432

MF \$1.08/PC \$1.43

Rural financial markets and income distribution in low income countries

Adams, Dale W.
Finafrica Foundation
Savings and development, v.5(2-3), 1981, p.105-113 : En, Fr

It is widely assumed that financial markets have little impact on income distribution in low-income countries and that a few carefully chosen policies, e.g., providing low-cost agricultural credit, can manipulate markets in favor of the rural poor. This paper argues that, on the contrary, the availability of cheap credit in most low-income countries is aggravating inequitable income distribution.

Real interest rates for agricultural credit are negative in most low-income countries. Although it is argued that such rates benefit the poor, the high demand for cheap loans and the subsequent rationing process used by lenders result in most loans going to the well-to-do and politically influential. In addition, these large borrowers are responsible for a high percentage of total money lost through loan defaults. In conclusion, the author argues that attempts to manipulate financial markets to reduce inequalities in income benefit only the rich. More flexible and generally positive real rates of interest are needed to reduce concentration of income and assets.

061

PN-AAL-610

MF \$1.08/PC \$9.75

Financial and program management in the Sahel: assessing the potential for local resources involvement

Tshibanda, Ray N'Tungamulongo
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Multisectoral
Development; National Association of Schools of Public
Affairs and Administration
Jun 1982, 62p. + 3 appendices : En
9360096
AID/DSAN-CA-0180

To help in designing a project to alleviate serious deficiencies in financial and program management by Sahelian Governments, a consultant was hired to assess the potential for local contribution to the proposed project. In the consultant's report, herein presented, assessment is made of the financial and program management problems in Niger, Upper Volta, Mali, and Senegal, and of these countries' existing resources - formal and informal training institutions, consulting and auditing forms, and individuals.

Besides providing country-specific recommendations, the authors recommend that the project should, in general: institutionalize systems to deal effectively with public sector management problems (structure, systems, and individual skills); provide individual countries with rapid and tailored responses to specific management (especially financial management) problems; emphasize cooperation between A.I.D., host governments, and other donor agencies to induce institutional change

and local capacity building; and rely on and seek to improve the quality of local goods and services. A list of potential partners for project implementation is appended.

062

PN-AAL-655

MF \$1.08/PC \$11.83

Comparative advantage: reports submitted to U.S.A.I.D.

Lucas, Robert E.B.
Boston University; U.S. Agency for International Development. Bureau for Near East. Egypt
Industrial sector strategy assessment, Dec 1981, v.p. : En

Future investment in Egypt's rapidly expanding manufacturing sector should be directed to productive job creation, where productivity is defined in terms of real social prices rather than the currently prevailing prices of commodities and labor. Two studies (along with an executive summary of the first) are here presented on the comparative investment advantage of various Egyptian industries.

The first paper reviews the investment potential of 26 industries, classifying them, respectively, as those warranting (8 industries), possibly warranting (11), and not warranting investment (7). The author notes that the industries in which Egypt has the least comparative advantage (e.g., iron and steel, automobiles) are most protected by the prevailing price structure and by subsidies, whereas those in which the advantage is greater (e.g., cement and leather) are discouraged through price controls and taxes on inputs.

The second study reviews current studies which use the domestic resource cost of foreign exchange to analyze the comparative investment advantage of Egyptian industries and reports on new calculations made on the basis of data from the 1977 input-output tables, from the Development Industrial Bank and the Investment Authority on individual enterprises, and on specific products within the engineering sector. Both studies were limited by the lack of public sector data.

063

PN-AAL-677

MF \$4.32/PC \$39.13

Agribusiness investment opportunities in Jamaica

Agribusiness Associates, Inc.; U.S. Agency for International Development. Bureau for Latin America and the Caribbean
Dec 1981, 292p. : En

The current Government of Jamaica has identified foreign investors as critical to the success of its policy to promote agribusiness, especially export agriculture. This report, written by and for businessmen, analyzes opportunities for U.S. private sector investment in Jamaican agribusiness.

A discussion of the environment for agribusiness in Jamaica provides information on domestic and export markets and on the agricultural sector, including its institutions and policies; USAID/J programs; financing, labor, assembly and distribution systems; and research and extension activities. A number of problems facing agribusiness investors are also identified, including shortages of capital and management personnel, agricultural theft, and the small domestic market. A second section reviews production and distribution systems for various commodities, including coffee, cocoa, sugar, bananas,

legumes, fishery products, and alcoholic beverages. Lastly, background data on Jamaica's currency, geography, climate, politics, economy, and land and water resources are provided. In sum, to successfully invest in Jamaican agribusiness, the U.S. investor must have access to a market that he understands, technical and management expertise, and capital.

064

PN-AAL-686

MF \$1.08/PC \$7.93

Analytical economic study of maize production in Egypt; research report

Basheer, Abdel-Mawla M.
Egypt. Ministry of Agriculture; U.S. Agency for International Development. Bureau for Near East. Egypt; Consortium for International Development
EMCIP publication, no.33, Oct 1981, iii, 51p. : En
Contract no. NEB-0010-S-00-1501-00
2630070

Total maize consumption in Egypt has more than doubled in the past 20 years and may double again by the year 2000, far exceeding feasible production and import levels. Constraints to increased maize yield include insufficient local production of high-yielding variety seed, delays in maize planting due to harvesting of wheat and clover, lack of mechanization and of hand labor, and unfavorable farming practices. This study presents an economic analysis of maize production in the Egyptian Major Cereals Improvement Project (EMCIP).

This largely statistical analysis describes changes in: production of maize (1950-80) and other crops (1960-80); improved maize varieties; maize-producing areas and actual yields (1975-79); total maize consumption (1960-80); maize production costs; market and farm-gate prices; net farm income per feddan of summer and nili maize (1975-80); and maize import prices (1960-80).

Using the principle of comparative advantage, the author recommends switching production from maize and wheat to other crops such as cotton and rice. Factors limiting the application of this principle are market demand and the need for crop rotation, soil conservation, irrigation and drainage, storage facilities, security reserves, and farm animal feed. Adjusting farm-gate prices is recommended to control production.

065

PN-AAL-708

MF \$3.24/PC \$32.89

Labor markets and industry in Egypt: analysis and recommendations for employment oriented growth; executive summary

Vermeulen, Bruce; Papanek, Gustav F.
Boston University; U.S. Agency for International Development. Bureau for Near East. Egypt
Industrial sector strategy assessment, Jun 1982, 151p. + attachments : En

Rapid economic growth greatly improved employment opportunities in Egypt during the 1970's. As this report demonstrates, however, this success will be difficult to sustain during the 1980's when, it is expected, 300,000-500,000 additional workers will need jobs each year. Creation of so many new jobs will require much faster employment growth than in the past

and can only be accomplished through fundamental policy changes.

This analysis of labor markets and industry in Egypt identifies as the main obstacles to rapid job creation: excessive wage/benefit increases, deterring the adoption of labor-intensive technologies; inconsistent public and private wage structures causing labor misallocations; low productivity in public enterprises; and inadequate literacy, basic education, and vocational education programs. After considering potential sources of employment, a job creation strategy focusing on the growth of labor-intensive export industries is proposed. The authors conclude by suggesting that A.I.D., in addition to providing funds for employment-generating investments, support Egyptian efforts to identify appropriate labor-intensive technologies, develop an effective human resource data base, and strengthen its education/training programs. Appended are two studies and a statistical supplement on employment and wages.

066

PN-AAL-720

MF \$5.40/PC \$66.69

Manuals for policy analysis price and market - intervention policies

Fletcher, Lehman B.; Artero, Raul Pablo; et al.
Iowa State University of Science and Technology.

Department of Economics

Sep 1981, 513p. : En

931023670

AID/TA-BMA-3

Governments intervene in agricultural pricing and marketing systems in many ways. This manual provides an overview of the role of analysis in formulating and implementing pricing policies and surveys various approaches for analyzing the impacts of market and price interventions. Designed for use in short-term training and self-study for staff members in planning and policy analysis offices and agencies in Latin America, it presents basic economic concepts and econometric tools for use in policy analysis. Practical, straightforward analytical approaches are emphasized.

After general discussions of policy analysis within the planning process and of data and information systems, the manual deals with the analysis of market stabilization and price-support programs. Input subsidies are then considered, followed by an analysis of international trade and exchange-rate policies. Lastly, basic econometric concepts and procedures are reviewed. Annotated bibliographies are annexed to four chapters.

067

PN-AAL-786

MF \$6.48/PC \$69.55

Political economy of income distribution in Egypt

Abdel-Khalek, Gouda; Tignor, Robert
Princeton University; U.S. Agency for International
Development. Bureau for Program and Policy
Coordination

1982, x, 525p. : En

9310643

AID/OTR-C-1492

The issue of social justice has occupied a prominent position in Egypt since the 1930's. While other less developed countries were still emerging from colonial rule, Egyptian intellectuals were already grappling with the question of how wealth should be divided. In 1952 the Egyptian military came to power and began the process of realizing the twin goals of social justice and economic development.

The purpose of this volume is to analyze what the Egyptians intended by a more equitable society, to describe the present distribution of wealth and poverty and how it came about, and to consider the policy implications of what occurred.

Written by Egyptian and American scholars, the case studies presented here provide a more complete picture of income distribution in Egypt than has existed before, raising and discussing a number of important political and economic questions concerning the impact of government policies, the role of private initiative, the importance of Egypt's external links, and the effects of a massive transfer of foreign resources.

The essays focus on: the government as an agent of income distribution, its education and land reform policies, and its commitment to more equitable distribution; interconnections between income distribution and economic development; the impact of taxation; patterns of urban growth and social mobility; and foreign economic aid. Egypt's similarities to and differences from other developing nations are also noted. (Author abstract, modified)

068

* PN-AAL-795

MF \$1.08/PC \$6.24

Agricultural growth and industrial performance in India

Rangarajan, C.

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

*Research report / International Food Policy Research
Institute, no.33, Oct 1982, 40p. : Bibliography, p.38-39, En*
9364062

DAN-4062-G-00-1009-00

* *International Food Policy Research Institute, 1776
Massachusetts Ave, NW, Washington, DC 20036 USA Free*

Development planners generally view industrial development and agricultural development as separate and independent. The study reported here examines the relationships between agriculture and industry in India in an attempt to determine how much industrial growth is influenced by agricultural performance.

The report first considers ways in which agriculture influences industry - by generating demand for industrial products used in farming, providing raw materials to agriculture-based industries, fostering direct rural demand for consumer goods, and creating indirect demand for basic and capital goods. Next, economic data from 1955-75 are examined; although agricultural and industrial growth are similar in many periods, they are not identical. Three types of linkages - production, demand, and savings and investment - between agriculture and industry are then identified and a macroeconomic model incorporating them is constructed. Using historical data for the period 1961-72, model simulations show that a 1% growth rate in agriculture can generate a 0.5% growth rate in industry. The report concludes that while agriculture has a strong influence on industrial development, because the ability to raise the agricultural growth rate is limited, industry cannot rely on agriculture

alone to stimulate growth. Appended are definitions of the model's variables, simulation tables, graphs comparing the actual and simulated values of economic indicators, and a 24-item bibliography (1965-81).

069

*** PN-AAL-796**

MF \$1.08/PC \$11.18

Egypt's food subsidy and rationing system: a description

Alderman, Harold; von Braun, Joachim; Sakr, Sakr Ahmed
International Food Policy Research Institute; U.S. Agency for International Development. Bureau for Science and Technology. Office of Nutrition; Egypt. Institute of National Planning

Research report / International Food Policy Research Institute, no.34, Oct 1982, 80p. : Bibliography, p.76-79, En 9311275

AID/DSAN-G-0259

* *International Food Policy Research Institute, 1776 Massachusetts Ave, NW, Washington, DC 20036 USA Free*

Egypt's extensive food subsidy system aims at establishing food security and protecting citizens from high food prices and major market fluctuations. The system, however, may be distorting resource allocation, reducing economic growth, and hindering productive investment. This study provides a detailed description of the food subsidy system and is intended both to assist Egyptian planners and economists and to serve as a guide for building models for in-depth analyses of the food distribution system as a whole.

The study begins with a discussion of policy goals, which includes a brief historical background, and proceeds to a discussion of market outlets, decisionmaking and administration within the food subsidy network, varying regional effects of subsidies on nutrition, and linkages to the agricultural sector. Two case studies are presented - one on marketing within Cairo and Giza, the other on purchases of subsidized and nonsubsidized foods in nine delta villages. The report concludes with a discussion of modifications of the subsidy system currently being discussed and a list of future research needs. Appended are extensive supplementary tables and a 72-item bibliography (1961-82).

070

PN-AAL-951

MF \$5.40/PC \$52.13

Small scale enterprise (SSE) development: a summary of descriptions and evaluations of SSE projects and an assessment of approaches used in SSE development by AID, the World Bank and other funding agencies

Millar-Wood, Jayne; Kean, John; et al.

U.S. Agency for International Development. Bureau for Program and Policy Coordination. Office of Evaluation; Devres, Inc.

1 Jul 1981, xii, 388p. : En 9300085

AID/SOD/PDC-C-0187

Further development of small-scale enterprises (SSE's), already a large and growing economic sector in most developing countries, could generate significant employment at a

relatively low cost. This study reported here examines in detail and compares the efforts of A.I.D., the World Bank, the U.N., and selected U.S. PVO's to promote SSE's in developing countries. The primary focus is on A.I.D. projects.

An extensive review of the principal approaches used by these agencies - technical assistance, financial assistance, institutional development, infrastructure development, procurement assistance, and industrial estate development - and of the agencies' experience with SSE projects is presented. The authors conclude that while little is definitely known about the impact and cost-effectiveness of different SSE approaches, a combination of technical and financial assistance appears to be most successful in promoting SSE development. It is recommended that: SSE project planners heavily emphasize technical assistance; PVO's be used widely, especially in the areas of technical assistance and institutional development; funding agencies continue to experiment with new approaches to SSE development, coordinate their efforts more closely, and maintain centralized data banks on project experience; and A.I.D. undertake a comprehensive evaluation of its SSE projects.

Appendices include the study's scope of work, summaries of 59 A.I.D., 20 World Bank and 16 PVO SSE projects, and a 24-item bibliography (1976-81).

071

PN-AAM-067

MF \$1.08/PC \$8.45

Local public finance in developing countries: a directory of experts

Miller, Barbara D.; Joseph, Richard M. Jr.
Syracuse University. Maxwell School of Citizenship and Public Affairs

Jul 1982, vii, 57p. : En Monograph no.7 9365303

DSAN-CA-0198

To increase knowledge of and communication about local public finance, this directory provides information on 87 experts and 3 institutions around the world concerned with questions of local public finance and its role in developing countries. For each expert or institution, a brief professional profile is provided and selected publications and projects worked on are listed. Entries are indexed by country of residence.

072

PN-AAM-068

MF \$2.16/PC \$12.87

Local government finances in Peru

Greytak, David
Syracuse University. Maxwell School of Citizenship and Public Affairs

Aug 1982, vi, 91p. : En Monograph no.8 9365303

DSAN-CA-0198

Peru's public sector is a highly centralized one in which local governments have played a minor and declining role. This study uses data collected from a variety of Peruvian district and provincial governments to analyze these governments' fiscal circumstances and their budgetary practices and capabilities. In the process, it raises a number of serious issues about the possibilities for greater local government participation in Peru's program of decentralized development.

The author found marked differences among the local governments in level of budgetary expertise, with the larger districts usually having better practices and more trained personnel. All local governments felt that they lacked both the resources to increase services and the autonomy to raise revenues for service provision. It appears that the primary requirements for enhancing the operations and effectiveness of local fiscal management are strengthening local accounting expertise and accounting and reporting consistency; and altering the property tax structure to include effective evaluation and payment mechanisms and effective sanctions against delinquencies. However, since decentralization is effective only when it is grounded in strong central government support, these improvements cannot be achieved unless the central Peruvian government is willing to exert greater influence on local finance.

073

PN-AAM-824

MF \$7.56/PC \$81.38

Economic and rural development in the Caribbean, 1975-1980: a bibliography

Carvajal, Manuel J.

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

Oct 1982, 623p. : En

53-319R-1-287

This bibliography, referencing approximately 4,000 works, is a sequel to several AID-sponsored bibliographies published a few years ago on economic and rural development in the Caribbean. It covers works published from 1975-80 dealing with agricultural productivity, institutional rigidities, feasibility and regional studies, political participation, and other development-related topics in the Caribbean and includes sources not previously presented on the Dominican Republic and the French and Dutch Caribbean. Selected were sources having an

impact on the formulation of public policy, with emphasis on analysis, research findings, and recommendations.

Sources are grouped by region or country and arranged alphabetically, and are classified according to 15 academic discipline groups and 10 document types. Periodicals and excessively technical documents are not listed. Many entries are annotated. Entries are also indexed by important names, major topics, geographic areas, and institutions.

074

PN-AAM-825

MF \$14.04/PC \$163.93

Economic and rural development in Central America and Panama, 1975 - 1980: a bibliography

Carvajal, Manuel J.

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

Oct 1982, 2v. : En

53-319R-1-287

This bibliography, referencing approximately 8,000 works, is a sequel to several AID-sponsored bibliographies published a few years ago on economic and rural development in Central America. It lists sources published from 1975-80 dealing with agricultural productivity, institutional rigidities, feasibility and regional studies, political participation, and other development-related topics in Central America. Included are sources not previously presented on Panama, Nicaragua, and El Salvador. Selected were sources having an impact on the formulation of public policy, with emphasis on analysis, research findings, and recommendations.

Sources are grouped by country or region and arranged alphabetically, and are classified by 15 groups of academic disciplines and 10 document types. Periodicals and excessively technical documents are not listed. Many entries are annotated. Entries are also indexed by important names, major topic, geographic area, and institutions.

075

PN-AAK-178
MF \$1.08/PC \$.65

Rice yield reduction by simulated rat damage in Bangladesh

Poche, R.M.; Haque, M.E.; et al.

U.S. Department of the Interior. Fish and Wildlife Service.
Denver Wildlife Research Center; Bangladesh Agricultural
Research Institute. Vertebrate Pest Division

Tropical pest management, v.27(2), 1981, p.242-246 : En
3880003

PA/ID/BNG-003-1-78

To improve planning for field control of rodent damage to rice in Bangladesh, tests, herein reprinted, were conducted to determine the varying effects on rice yield of simulated rat damage at varying stages of plant growth.

The effects of stem cuttings on IR-8 rice yield was examined. Fields were subjected to four damage levels: 0 (control), 10, 25, and 50% of the stems cut. A modified split-plot sampling design was used with 10 1 square meter plots tested at each damage level in three growth stages: tillering, booting, and maturity. Each of the 120 plots (2,400 hills) was harvested and yields compared by analysis of variance and least significant difference (LSD) tests. Ten percent of all stems removed during the tillering stage produced growth compensation and a higher yield resulted. Trends in rice yields for different damage levels showed that the later the damage occurred, the greater the yield loss. An LSD analysis of yields for the damage levels revealed no significant differences during tillering. At booting, significant differences (P0.05) in yields were noted with over 10% of the stems cut. At maturity, yields for all damaged levels differed significantly (P0.01). The results of this study demonstrated that rat damage in rice up to the booting stage did not affect yield significantly. From an economic standpoint, rodent control by field baiting before booting stage is not recommended in monsoon rice. (Author abstract, modified)

076

PN-AAK-182
MF \$1.08/PC \$1.56

Crown-baiting in coconut trees with anticoagulant rodenticides to reduce rat damage

Reidinger, Russel F. Jr.; Libay, Justiniano L.

U.S. Department of the Interior. Fish and Wildlife Service.
Denver Wildlife Research Center

Biotrop special publication, no.12, 1980, p.211-222 : En
931047311

AID/ID/TAB-473-01-67

Four 1-ha coconut plots with chronic rat problems near Victoria, the Philippines, were crown-baited with anticoagulant rodenticides. During the first year, two plots were baited (25% of the trees per plot) and two were assigned as reference plots. All plots were baited during the second year. Monthly records were kept of bait used, rat activity, and numbers of fallen and harvested nuts. *Ratus ratus mindanensis*, *R. argentiventer*, and *R. exulans* were collected at ground level, but it appeared that *R. r. mindanensis* was the major coconut pest. Rat activity and fallen nuts were greatly reduced by baiting. Coconut production for all plots averaged about 2.5 times the pretreatment levels. The cost-benefit ratio for the method averaged 1:24 during the second year. Fallen, rat-damaged nuts accounted for only 4.5-5.8% of the estimated increases in yield, and assessments

based on these counts would have greatly underestimated actual benefits of the method. The crown-baiting method effectively reduced damage in experimental plots with good economic return and holds promise of providing long-term relief from chronic rat problems on small coconut farms. (Author abstract, modified)

077

PN-AAK-183
MF \$1.08/PC \$.91

National rat control program in the Philippines

Fall, Michael W.; Sumangil, Jesus P.

U.S. Department of the Interior. Fish and Wildlife Service.
Denver Wildlife Research Center

Biotrop special publication, no.12, 1980, p.9-15 : En
931047311

PA/ID/TAB-473-01-67

Like any Asian country, the Philippines implements its rat control program through countrywide extension activities. Filipino farmers are persuaded to participate in an innovative and effective rodent control program that goes beyond the traditional practices of killing rats. The government recommends continuous anticoagulant baiting throughout the rice cropping period. Different rat damage controls for other crops (corn, sugarcane, coconut) are being investigated. Extension efforts are likewise being used to demonstrate various control programs that will help establish direct contact with farmers and thereby elicit their continuing participation. To achieve its extension goals, the Philippine Government considers training field technicians a critical need in its national rat control program. A 70-item bibliography (1969-78) is appended. (Author abstract, modified)

078

PN-AAK-192
MF \$1.08/PC \$.52

Control of agricultural rodents through the sustained baiting method

Sanchez, Fernando F.; Reidinger, Russel F. Jr.

U.S. Department of the Interior. Fish and Wildlife Service.
Denver Wildlife Research Center

Biotrop special publication, no.12, 1980, p.183-186 : En
931047311

PA/ID/TAB-473-01-67

A sustained baiting program in the Philippines evolved from field tests that proved effective in protecting rice crops from rat damage. This modified continuous baiting requires only a small part of the farmer's activities, about 10 weeks during a crop season.

Chronic toxicants (anticoagulants) were successful in protecting a rice crop where an acute toxicant, zinc phosphide, failed. The method features specific bait station designs and placement patterns in the ricefield habitat, and continuous baiting for 3-4 weeks after transplanting, after which maturing grains are more attractive to rats than any bait offered. A good control program will eliminate uncleared areas bordering rice fields, which harbor rats between rice crops. A continuing testing program is needed to identify toxicants for use as replacements in case of the development of anticoagulant resistance.

The sustained baiting method can be applied on single small farms, not necessarily on a community-wide basis. The



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advantage of sustained baiting is expressed in terms of its minimal cost, efficient control, and relative safety to man and his environment. (Author abstract, modified)

079

PN-AAK-821

MF \$1.08/PC \$2.99

Multi-farm use of agricultural machinery: an effective approach for bringing mechanization technology to smallholder agriculture

Fitzgerald, L. W.; Downing, Charles M.

(Meeting on the Topic of Multi-Farm-Use of Machinery, 3rd, Hanover, DE, 8-10 Sep 1980)
1980, 23p. : En

Shared use of farm machinery is a practical, efficient way to maximize small farmers' access to and use of valuable agricultural inputs. This paper describes and assesses various organizational systems for implementing multi-farm use based on a cross-section of developing country experience.

The institutional arrangements for organizing multi-farm use of agricultural machinery can be either public (government mechanization services or schemes offering a wider range of farm management services) or private (custom hire or neighborhood hire as well as cooperatives). Choosing an appropriate arrangement - crucial to a successful multi-farm system - depends on the socioeconomic situation, type of agriculture, farm size and structure, land fragmentation, and homogeneity of production in the targeted region.

Based on a review of developing country experience, the authors conclude that private custom services have been the most successful, chiefly because responsibility and authority rest with the individual owner. Publicly financed and controlled systems generally have had little success due to their lack of user and manager incentives, politicization of decisionmaking, incompatibility with the seasonal nature of farming, and difficulty in achieving financial viability. Public and private cooperative systems have been the least successful, being difficult to set up and administer and tending to wither when faced with competition.

The authors note that the type of equipment used has little effect on farm employment since the machinery is used primarily for land preparation. Although technical and cost constraints generally favor mid-size, four-wheel tractors, purchasers and operators are best able to judge the size and type of machinery needed. It is recommended that the U.N. Food and Agriculture Organization begin monitoring and evaluating various multi-farm use systems and that the relationship between agricultural mechanization and energy demand be thoroughly studied. A list of 11 references (1967-80) is provided.

080

PN-AAL-173

MF \$5.40/PC \$59.15

Evaluation of agricultural sector planning activities in Latin America and the Caribbean

Riordan, James T.

Abt Associates, Inc.; U.S. Agency for International Development. Bureau for Latin America and the Caribbean. Office of Development Resources

Jun 1982, v.p. : En

5980044

AID/SOD/PDC-C-0389

A comprehensive study was made of A.I.D. agricultural sector planning in Latin America and the Caribbean over the last decade to determine and evaluate the factors associated with the relative success or failure of past efforts and to outline a set of usable recommendations for the design of future activities.

A framework for understanding agricultural sector planning in the region and a review of the rationale and history of A.I.D.'s support for this activity are provided as essential background material. The design of the evaluation is then described, followed by a review of the findings gathered from documentation on 63 A.I.D. activities, visits to six countries and interviews with personnel from two other, and a survey conducted by the Interamerican Institute for Agricultural Cooperation of 23 planning units in the region.

Major lessons learned are outlined and form the basis of a future A.I.D. strategy centered on generating an effective demand for agricultural sector planning. A discussion of directions in future study concludes the report. Attachments include 30 exhibits and five appendices.

081

PN-AAL-283

MF \$1.08/PC \$4.42

Village level impact of machine threshing and implications for technology development in semi-arid tropical India

Walker, T.S.; Kshirsagar, K.G.

International Crops Research Institute for the Semi-Arid Tropics

Economics program progress report, no.27, Nov 1981, 33p. :
References, p.31-32, En

To assess the actual need for and impact of mechanical threshing in the semi-arid tropics, a study was conducted in rural Kanzara, India. Results of that research, presented herein, indicate that widespread diffusion of machine threshing has had only a minimal impact on agricultural costs, cropping methods, and the labor market.

The authors trace the rapidly expanding use of mechanical threshers and discuss the role of these threshers in cost reduction, profitability, and price determination. Next, the seasonal demand for farm labor, the timeliness of farming operations, and the intensity of cropping are examined in relation to the use of threshers. Lastly, the authors explore the implications of technical innovations in threshing.

The authors conclude that diversified crop production limits the scope for and the impact of mechanical threshing throughout semi-arid tropical India. Cultivation of non-threshable, longer growing crops such as cotton greatly diminishes the potential for mechanical threshing; given present levels of cereal production, only a few threshers per village are economically feasible. They recommend that investments other than in mechanical threshing be made to increase village-level crop production. A list of 18 references are included (1953-81).



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082

PN-AAL-285
MF \$1.08/PC \$2.99

Whole-farm modeling for assessment of dryland technology

Ghodake, R.D.; Hardaker, J.B.

International Crops Research Institute for the Semi-Arid Tropics

Economics program progress report, no.29, Dec 1981, ii, 20p. : References, p.19-20, En

Because of the integrated nature of dryland farming systems, assessment of new dryland technologies, according to this report, must be undertaken in the whole-farm framework if it is to yield correct inferences about the technology's consequences and desirability.

Two current methods of agricultural technology assessment, the technical efficiency and partial budgeting methods, are reviewed and the case for whole-farm modeling is presented, along with a discussion of the comparative value of whole-farm modeling methods. Of the latter, mathematical programming models, especially those that account for risk, are advocated by the authors, although they note that in the absence of suitable computer facilities, budgeting methods can be used. Implementation of a mathematical programming approach to whole-farm modeling requires the construction of a suitable model incorporating a relevant objective function, appropriate activities, and constraints on these activities. The assessment technologies using this approach can provide information useful in agricultural research, extension, and policymaking. (Author abstract, modified)

083

PN-AAL-295
MF \$1.08/PC \$10.66

Growth and equity: policies and implementation in Indian agriculture

Sarma, J.S.

International Food Policy Research Institute

Research report, no.28, Nov 1981, 76p. : En 9364062

DAN-4062-G-1009-00

India's successive Five-Year Plans have sought to balance agricultural growth with social justice. This paper reviews the history and components of this problem and proposes a strategy to alleviate it.

Reviewed first is the history of Indian agricultural policy since 1951, a policy which has focused explicitly on social justice since 1969, and of agricultural rates between 1949/50 and 1978/79, with emphasis on the effect of high-yielding varieties. Next, discussion is given to the impact of new technology and of credit and input programs on interpersonal and interregional disparities. A review of the conflicts between growth and equity in agricultural strategies leads to proposals of a strategy based on: promoting irrigation in areas where feasible and serving small farmers in these areas; developing technologies in dry areas; promoting non-farm occupations, cottage industries, and small industries in rural areas; and developing massive, decentralized rural works and food for work programs. Concluding chapters are devoted to the institutional and agricultural planning and implementation reforms needed to make the strategy a success.

A 5-page bibliography and remarks on Indian agriculture from a Western European, Japanese, and U.S. perspectives follow.

084

PN-AAL-653
MF \$1.08/PC \$8.32

ICRISAT in the eighties; a 10-year plan

International Crops Research Institute for the Semi-Arid

Tropics

Oct 1982, 61p. : En

Ten years after its founding, the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) has established research programs in India, Africa, Central America, West Asia, and other semi-arid areas; its current concern is for foodcrops in rainfed agricultural areas of uncertain rainfall. This report reviews ICRISAT's accomplishments, and projects its activities for the next 10 years.

Current figures predict an imminent major shortfall in cereals, pulses, and oilseeds in the semi-arid tropics. ICRISAT's programs to avert this are outlined, including crop improvement strategies and priorities and resource management research. The organization of ICRISAT consists mainly of a training program and six multidisciplinary research programs: crop improvement programs in sorghum, millet, pulses, and groundnuts and resource management programs in farming systems and economics. Information and technology will be transferred through workshops, seminars, and conferences, plus library and information services. A cooperative network of interrelated programs has been developed in six African countries along with a gene bank serving breeders throughout the world. Notes on ICRISAT's personnel and capital resources conclude the report.

085

PN-AAL-665
MF \$1.08/PC \$3.25

Global experiment in agricultural development

Brady, N.C.

International Rice Research Institute

1982, 24p. : En

Why are international agricultural research centers such as the International Rice Research Institute (IRRI) essential to the efforts of developing countries to become self-sufficient in food production? To answer this question, this transcript of a speech by the former director of the IRRI traces the development of the current network of Centers from their beginnings in the late 1940's, through their expansion in the mid-1960's, to the securing of broad international support with the development of the Consultative Group on International Agricultural Research (CGIAR) in 1971, up through the achievements of the 1970's.

The report concludes with a brief examination of the issues which the IRRI faces in coming years, namely: maintaining its autonomy and flexibility; continuously evaluating allocation of resources; improving relations with developed and developing countries; re-evaluating training programs; and increasing communications with groups which share an interest in its work. A list of the 13 CGIAR institutions and their addresses is appended.



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086

PN-AAL-742

MF \$3.24/PC \$27.43

Report of the presidential mission on agricultural development in Egypt

U.S. Department of Agriculture. International Agricultural Development Service; Egypt. Ministry of Agriculture
Jul 1982, xi, 212p. : En
Strategies for accelerating agricultural development

An Egyptian/U.S. Presidential Mission was formed to make a comprehensive assessment of the potential for accelerating lagging agricultural production in Egypt and to develop strategies to alleviate current agricultural sector constraints. This report presents the Mission's findings.

The authors discuss: agriculture's declining but still important position in Egypt's economy; the potential for agricultural development, including greater productivity and farming a larger land area; and the policy, institutional resource, technological, and marketing constraints to such development. Suggested strategies to accelerate agricultural development include changing current government commodity price policies; developing and maintaining agricultural research and extension programs; managing land and water resources; expanding promising agricultural enterprises; conducting major production campaigns for key agricultural commodities; reducing the rapidly growing demand for agricultural commodities by limiting farm subsidies and population growth; and increasing the productivity of currently available land and of farming enterprises.

087

PN-AAL-816

MF \$1.08/PC \$2.47

Farm machinery for upland rice

Fischer, R.C.
International Rice Research Institute; U.S. Agency for International Development. Bureau for Asia. Philippines; Philippines. Ministry of Agriculture
(FAO Regional Training Course: Improved Cultural Practices for Upland Rice, Chieng Mai, PH, 5-23 Oct 1981)
Oct 1981, 18p. : En
4980265

Farm mechanization can directly relieve labor shortages during tilling, transplanting, harvesting, and threshing; indirect benefits accruing to mechanization may also be substantial. This paper makes a case for the increased mechanization of rice farming on approximately 400,000 ha of upland farms in Thailand.

Discussed are the benefits associated with increased use of farm machinery: increased crop production - through timely operations, multi-cropping, and improved material and labor inputs - and increased time for off-farm work and leisure. Successful cooperative efforts between the Ministry of Agriculture and Cooperatives and the International Rice Research Institute in testing and developing appropriate manual, animal, and engine-powered farm machinery are presented. Especially adapted for upland rice cultivation are a new or improved buffalo plow, fertilizer applicator, upland and manual cyclone feeder, weeder, reaper, and thresher.

088

PN-AAL-859

MF \$1.08/PC \$2.60

Interdisciplinary challenges and opportunities in international agricultural research

Flinn, J.C.; Denning, G.L.
International Rice Research Institute
IRRI research paper series, no.82, Nov 1982, 19p. :
References, p.16-19, En

The network of International Agricultural Research Centers (IARC's) was established to increase investment in foodcrop and livestock research in developing countries. The Consultative Group on International Agricultural Research, an informal association of countries, international agencies, and private foundations, accepts responsibility for funding existing IARC's and for taking new initiatives to strengthen international agricultural research. IARC research is problem-focused and frequently cross-disciplinary. The International Rice Research Institute's Cropping Systems Program is an example of a major cross-disciplinary research effort.

Conducting interdisciplinary research is not without challenges. For example, issues such as common identification of team goals, leadership, disciplinary biases, and the rewards system may constrain productivity and proliferation of multidisciplinary research teams. Many constraints might be reduced if scientists were more formally exposed to the systems approach and the philosophy of interdisciplinary agricultural research. It is argued that the IARC's have an important future role in promoting and supporting interdisciplinary research in national agricultural research programs. (Author abstract)

089

PN-AAL-956

MF \$2.16/PC \$15.99

Participatory approaches to agricultural research and development: a state of the art paper

Whyte, William F.
Cornell University. Center for International Studies; U.S. Agency for International Development. Bureau for Science and Technology. Office of Rural Development and Development Administration
Special series on agriculture research and extension, no.1, May 1981, x, 111p. : En
931001137
AID/ta-BMA-8

Existing research and development (R&D) strategies have tended to support farmers already in relatively advantageous positions and to ignore the majority of small farmers who struggle under less favorable conditions. This state-of-the-art paper presents an overview of past R&D efforts and proposes a new R&D strategy to assist the rural poor.

After examining limitations of and lessons to be learned from conventional R&D strategies, the author describes the agricultural R&D strategy used by institutions in Bangladesh, Ethiopia, Mexico, and Colombia which emphasizes participation by small farmers and incorporates animal husbandry as an integral element. Efforts to build a farming systems research strategy into R&D programs are then examined, using examples from Guatemala and Honduras.

The author concludes that any new R&D model should involve research conducted on small farmers' actual fields; farmer participation in research and extension; and a major



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emphasis on cropping and farming systems, experimentation, and interdisciplinary collaboration. In order to enhance the quality of life among small farmers and to build material resources into the organizational base, linkages are required between local farmer organizations and government bureaucracies. Attached are a list of 107 references (1911-1981).

090

PN-AAL-964

MF \$4.32/PC \$45.24

Agricultural sector assessment

Hogan, Edward B.; Asmon, Itil E.; et al.
U.S. Agency for International Development. Bureau for Near East. Yemen; Yemen. Ministry of Agriculture
Dec 1982, 308p. + appendices : En

Yemen is by far the most fertile country on the Arabian Peninsula, yet agriculture remains an arduous undertaking. This report assesses the Yemeni agricultural sector and examines constraints to and opportunities for agricultural development in Yemen.

An introductory section describes the physical setting, the history of Yemeni agriculture, and recent agricultural sector performance. Subsequent sections discuss the social milieu, the economy, agricultural institutions, agricultural education and training, horticulture, dry land agriculture and irrigated field crops, livestock and poultry, irrigation, fisheries, forestry, farm systems, and agricultural marketing. A final section presents an agricultural development strategy based on improving agricultural education and training, strengthening the institutional capacity of the Ministry of Agriculture and Fisheries, effectively using scarce water resources, developing indigenous private enterprises to serve farmers, and limiting A.I.D. and Consortium for International Development involvement in agricultural projects over the next five years. A 108-item bibliography (1975-82) is included. Appended is Yemen's second five-year plan for agriculture.

091

PN-AAM-092

MF \$5.40/PC \$55.90

Amazonia: agriculture and land use research

Hecht, Susanna B.
International Center for Tropical Agriculture
(International Conference on Amazonian Agriculture and Land Use Research, 1st, Cali, CO, 16-18 1980)
CIAT series, no.03E-3(82), May 1982, 428p. : En
Spanish version: PN-AAM-093
9310865

While the Amazon Basin holds great potential for agricultural and forestry development, experience in this vast region has demonstrated numerous technical, social, and economic constraints to development. This paper reports the proceedings of a conference to identify and promote research programs which could lead to improved agricultural technologies suited to Amazonia.

The report first presents overviews of the national policies of Bolivia, Brazil, Colombia, Ecuador, Peru, and Venezuela concerning agricultural development in Amazonia. Next, five technical reports review the current state of knowledge on the Amazonian ecosystem and analyze alternative land use options. Natural resources, soil management, pasture and animal production, and perennial crops are discussed. Following this, four reports on forestry/agroforestry systems, practices, and

research in the Amazon Basin are presented. A final section summarizes conference participants' conclusions and lists priority research needs. A conference proposal to establish a mechanism for strengthening research has already led to the creation of an informal cooperative research network known as the Red de Investigacion Agraria para la Amazonia.

092

PN-AAK-953

MF \$5.40/PC \$60.45

Winged bean

Philippine Council for Agriculture and Resources Research
(International Symposium on Developing the Potentials of the Winged Bean, 1st, Manila, PH, Jan 1978)
Jan 1978, xvii, 447p. : En

Continuing research has found that the great potential offered by the winged bean, *Psophocarpus tetragonolobus* L., is matched only by the complex problems, biology-or market-related, associated with the crop's development. In response to these problems, this volume presents 64 reports contributed during the first International Symposium on Developing the Potential of the Winged Bean.

Papers were presented in the areas of: (1) germplasm and genetics, including the diversity, collection, evaluation, evolution, and characteristics of indigenous and exotic winged bean varieties; (2) botany, especially regarding flowering behavior and plant mutations; (3) agronomy, emphasizing cultural practices and plant growth and yield; (4) entomology and pathology, e.g., insect pests and diseases; and (5) crop utilization, focusing on the actual and potential nutritional contribution of the winged bean. Brief country reports discuss the role of winged beans in Pakistan, Papua New Guinea, Malaysia, Australia, Nepal, Costa Rica, Puerto Rico, Ghana, Thailand, El Salvador, the Philippines, Korea, and Bangladesh.

In the course of the conference much new information was disseminated on such topics as the winged bean's extraordinary nodulation capacity, its exceptional seed production, its broad and diverse genetic base, and its cultivation in a growing range of environments; the remarkably high protein content of the bean pods; the discovery of promising new relatives of the winged bean; and the marked increase in research and experimentation regarding the winged bean's nutritional value.

The conference participants noted that the varieties of winged beans grown and the cultivation practices employed by small farmers has not changed despite advances in research. They recommend future work on improving extension efforts; developing dwarf-type plants and varieties with non-shattering pods; devising a standardized system for organizing winged bean germplasm, possibly through a central germplasm facility and distinct breeding program geared specifically to each of the plants many uses; and examining post-harvest losses. A list of symposium participants is included.



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093

* PN-AAL-342
MF \$7.56/PC \$82.68

Principles and practices of rice production

De Datta, Surajit K.

International Rice Research Institute. Department of
Agronomy

1981, xix, 618p. : Chapter references, En

CIP no. 633.1'8

* Available to LDC purchasers from IRRI for \$6.50 plus
postage. Available to all others from the publisher, John
Wiley, for \$40.00.

The extensive focus placed on rice by agricultural research in the past 20 years has resulted in the development of modern rice varieties and modern technologies which have greatly increased rice production, especially in Asia. This monograph summarizes the most significant theoretical and practical developments in recent rice research.

The importance of rice as a food crop is discussed, including yields in rice-growing countries. Appropriate types of landscape, soil, and climatic conditions are described, and the chemistry of submerged rice soils is discussed. Plant growth stages affecting varietal development and seed production in tropical and temperate zones are treated, along with systems of rice cultivation and management of land, water, soil fertility, and fertilizer. Harmful effects of insects, diseases, weeds, rodents, and other agents are covered, as well as harvesting technology and postharvest treatments. A final chapter considers modern rice technology in relation to the world's food supply and to the biological and socioeconomic barriers that keep farmers' rice yields below those of researchers. A bibliography follows each chapter. Author and subject indexes are provided.

094

PN-AAL-349
MF \$2.16/PC \$18.07

Research highlights for 1981

International Rice Research Institute

1982, 138p. : En

Although rice production in most Asian countries rose during the past decade, increases in rainfed areas were only sufficient to keep pace with population growth. This report presents highlights of research conducted in 1981 by the International Rice Research Institute (IRRI) to improve the production of both rainfed and irrigated rice.

Major research results are detailed for the following areas: genetic evaluation and utilization; control and management of pests; irrigation and water management; soil and crop management; environmental factors; constraints to high rice yields; consequences of new technology; and cropping systems. Information is also presented on IRRI's development and testing of machinery, as well as its training programs, international activities, and finances.

In 1981, IRRI focused its efforts more sharply on developing improved varieties for rainfed areas, organizing inter-disciplinary teams to deal with shallow but submergence-prone, waterlogged, and tidal swamp areas.

095

PN-AAL-652
MF \$1.08/PC \$6.24

IBPGR Secretariat consultation on the genetic resources of cruciferous crops

U.N. Food and Agriculture Organization. International Board
for Plant Genetic Resources

(IBPGR Secretariat consultation on the genetic resources of
cruciferous crops, Rome, IT, 17-19 Nov 1980)

Jun 1981, iv, 48p. : En AGP: IBPGR/80/100

Modernization of agriculture has severely threatened the genetic diversity of the crucifers, a family of nutritionally and economically important crops which includes the cabbages and mustards. This report analyzes existing germplasm resources for each major cruciferous crop and outlines priorities for the collection and preservation of those species that still exist. Six important species of *Brassica* - *B. oleracea*, *B. campestris*, *B. juncea*, *B. carinata*, *B. napus*, and *B. nigra* - and one species of *Raphanus* and wild *Raphanus* relatives are covered.

For each species, the authors assess the historical development and current value of the genetic base and the degree to which genetic variation has been conserved. Existing collections are identified; gaps in germplasm and needs for further collecting are indicated. Following this, centers for base collections of cruciferous crops are designated, recommendations regarding storage are made, overall collection priorities are detailed, and action plans are defined according to the priority assigned to each species.

A descriptor list and collection data sheet are appended. Work continues on the creation of characterization and evaluation descriptor lists and on the development of a standard key for each species and subspecies.

096

PN-AAL-663
MF \$1.08/PC \$3.38

IBPGR working group on genetic resources of cocoa

U.N. Food and Agriculture Organization. International Board
for Plant Genetic Resources

(IBPGR Working Group on Genetic Resources of Cocoa,
Arlington, VA, US, 8-9 Jul 1980)

Mar 1981, i, 25p. : En AGP: IBPGR/80/56

Cocoa's future as an important cash crop in developing countries is threatened by eroding germplasm resources and uncoordinated collecting of germplasm. This report reviews a meeting held by the working group on cocoa of the International Board for Plant Genetic Resources (IBPGR) to establish an international plan of action and make specific recommendations regarding the preservation of the genetic base of cocoa.

Major collections of cocoa germplasm are discussed in regard to the nature of their materials and future collection priorities. Collecting endangered and wild species is encouraged; priority collecting areas in Latin America are identified. The need for research in methods of conservation is pointed out and sampling techniques are described. Three types of designated gene pool centers are recommended - primary, universal, and quarantine transfer - and proposed centers are designated. Quarantine measures for controlling the exchange of cocoa germplasm are also proposed. It is urgently recommended that: (1) the IBPGR plan, coordinate, and support a 2-3 year program of collection and conservation by centers; and (2) this report be disseminated in the interest of eliciting supplemental funding. Appendices list meeting participants,



papers consulted, and cocoa descriptors for characterizing collections.

097 **PN-AAL-669**
MF \$2.16/PC \$18.46

Mungbean

Morton, F.; Smith, R.E.; Poehlman, J.M.
U.S. Agency for International Development. Bureau for Latin America and the Caribbean. Puerto Rico; University of Puerto Rico, Mayaguez. College of Agricultural Sciences. Department of Agronomy and Soils
Mar 1982, 136p. : References, p.98-136, En 9310128
AID/DSAN-G-0101

The mungbean *Vigna radiata* (L.) Wilczek, nutritionally valuable and economically available, is an important food crop in developing countries. This state-of-the-art bulletin describing the agronomic, economic, and nutritional aspects of the mungbean has been prepared as part of a program to study biological nitrogen fixation for food production in the tropics.

After a brief synopsis of worldwide mungbean production and its economic significance, the bulletin provides information on the biological origins of the mungbean, its changing classifications, and its distinction from blackgram *Vigna mungo* (L). Agronomic information on climatic and soil requirements; mungbean's potential for nitrogen fixation; production practices and requirements; genetics and breeding; and diseases and pests is provided. Mungbean's nutritional quality and uses are also discussed. This information, it is noted, can contribute to the integrated technological packages needed to increase mungbean production among small farmers of developing countries. A 39-page bibliography is included (1917-80).

098 **PN-AAL-670**
MF \$1.08/PC \$8.06

Genetic resources of Amaranths: a global plan of action

Grubben, G.J.H.; van Sloten, D.H.
U.N. Food and Agriculture Organization. International Board for Plant Genetic Resources
Feb 1981, vi, 25p. + 5 appendices : En AGP:IBPGR/80/2

Because of the limited level of knowledge about the economically and nutritionally important amaranths, the International Board for Plant Genetic Resources has assigned priority to formulating a global plan for conservation of amaranth germplasm. This report presents worldwide data on amaranth cultivation and collection, and for a global plan of action.

After reviewing the economic and nutritional importance of both vegetable and grain amaranths, the report discusses cultivation practices; centers of origin and genetic diversity; germplasm collections, breeding, and research, especially in the United States, India, and Nigeria; collecting priorities, based on collection gaps and threatened genetic erosion; and base and active collection centers and contact persons. Procedures for the global collection of amaranths are recommended.

Appended are an amaranth descriptor list for use in genetic resource documentation; a provisional key to edible species; and lists of collectors, publications, and researchers.

099 **PN-AAL-672**
MF \$1.08/PC \$7.15

World survey of wheat genetic resources

Croston, R.P.; Williams, J.T.
U.N. Food and Agriculture Organization. International Board for Plant Genetic Resources
Feb 1981, vii, 20p. + 4 appendices : References, p.19-20, En AGP:IBPGR/80/59

Developing a world network of genetic resource activities on wheat has been accorded high priority by the International Board for Plant Genetic Resources because wheat is a staple food for 35% of the world population and accounts for more than 20% of food calories consumed. This document presents the findings of a survey of major world wheat collections in order to identify existing gaps in these collections and to recommend future collection priorities.

After reviewing factors which limit development of a wheat germplasm network, the authors present a taxonomy of wheat and its relatives. They next discuss their methods of data collection and analysis. Finally, the names and locations of various accessions are listed in tabular form. Appendices include lists of 1978 and 1981 wheat collection priorities by geographic area; a list of major collections from which data were analyzed; a list of synonymous species names; and a series of maps showing where collected samples originated.

100 **PN-AAL-675**
MF \$1.08/PC \$4.03

IBPGR working group on the genetic resources of sweet potato: report

U.N. Food and Agriculture Organization. International Board for Plant Genetic Resources
(IBPGR working group on the genetic resources of sweet potato, Charleston, SC, US, 5-7 Aug 1980)
Feb 1981, iii, 9p. + 5 appendices : En AGP:IBPGR/80/63

Because germplasm loss in the economically and nutritionally important sweet potato, *Ipomoea*, threatens the present and future potential of this crop, the International Board for Plant Genetic Resources (IBPGR) has given high priority to creating an international system for the conservation of sweet potato germplasm. This report summarizes the status of germplasm collection activities and makes recommendations for future work.

The report first reviews recommendations for collecting sweet potato germplasm from primary (Guatemala, Ecuador, Columbia, and Peru) and secondary geographic centers (China, Southeast Asia, and East Africa). The report then identifies major existing collections and identifies gaps, reviews collecting and related activities, designates collection centers, and proposes techniques for storage, maintenance, and pathogen control of collections.

Included in appendices are a list of participants and the agenda for an IBPGR working group meeting on the sweet potato, a map showing the geographical distribution of *Ipomoea* section *Batatas*, a key to *Ipomoea* species, and a descriptor list for use in genetic resource documentation.



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101

PN-AAL-745
MF \$2.16/PC \$18.33

Manual for testing insecticides on rice

Heinrichs, E.A.; Chelliah, S.; et al.
International Rice Research Institute
1981, x, 134p. : En

Insecticides are essential tools in controlling rice insect pests. This manual presents insecticide evaluation methods developed and tested at the International Rice Research Institute over 15 years. It discusses the planning of insecticide evaluation studies, the rearing of test insects, and the techniques used to evaluate insecticides in the laboratory, insectary, and field. It explains in detail the methodology used in the laboratory and insectary to determine the resistance levels of insects to insecticides and the relative toxicity of insecticides such as contact and stomach poisons and fumigants. Also included is the methodology for field experiments to determine the activity of insecticides using various application methods: precision and foliar spraying, broadcast application of insecticide granules, and root zone application. A discussion of techniques for the physical assessment of spraying systems follows. Recommended procedures for sampling and statistical analysis of insect populations and plant damage, for data reporting, and for insect control conclude the report. Extensive appendices include reference tables for determining insecticide rates and a conversion table.

102

PN-AAL-759
MF \$1.08/PC \$4.29

IBPGR symposium on the genetic resources of the Far East and the Pacific; report

U.N. Food and Agriculture Organization. International Board for Plant Genetic Resources
(IBPGR symposium on the genetic resources of the far east and the Pacific, Tsukuba, JP, 21-24 Oct 1980)
1981, iv, 17p. + 2 appendices : En

When the International Board for Plant Genetic Resources (IBPGR) established its general framework of crop and regional priorities in 1976, inadequate information was available on the genetic resources of the Far East and Pacific Islands. This report summarizes an IBPGR symposium held in 1981 to discuss this subject.

After highlighting the symposium's agenda and opening addresses, the authors present summaries of reports on the genetic resources of 12 countries in the Far East, the Pacific Islands, and the Pacific Basin, as well as reports from six international and regional organizations. The need to conserve genetic resources is touched upon briefly. Next, priorities for the different countries of the region in regard to 36 crops are provided in tabular form, followed by an outline of the genetic resource programs of the participating countries. Lastly, a series of recommendations from the symposium are offered. Chief among them is the suggestion that East Asia and the Pacific be recognized as distinct regions within the IBPGR. A list of symposium participants and observers is appended.

103

PN-AAL-850
MF \$1.08/PC \$3.12

Rice

Toll, Jane; Anishetty, N. Murthi; Ayad, G.
U.N. Food and Agriculture Organization. International Board for Plant Genetic Resources
1980, i, 20p. : En AGP: IBPGR/80/109
Directory of germplasm collections: cereals, v.3(3)

With the development of a global network of activities concerning genetic resources, it has become increasingly apparent that there is an information gap relating to what material is held where. This directory of worldwide rice germplasm collections is one of a series issued by the International Board for Plant Genetic Resources in an attempt to remedy this situation. Because the data, which are now being computerized, are incomplete, future reviews and revisions will be undertaken.

Listings include the name of the institution, curator or person in charge, details of the sample, geographical representation, evaluation and documentation, and storage.

104

PN-AAL-851
MF \$1.08/PC \$5.46

Sorghum and millets

Anishetty, N. Murthi; Ayad, W.G.; Toll, Jane
U.N. Food and Agriculture Organization. International Board for Plant Genetic Resources
1981, vi, 37p. : En AGP: IBPGR/81/55
Directory of germplasm collections: cereals, v.3(4)

With the development of a global network of activities concerning plant genetic resources, it has become increasingly apparent that there is an information gap relating to what material is held where. This directory of sorghum and millet germplasm collections is one of a series being issued by the International Board for Plant Genetic Resources in an attempt to remedy this situation. Because the data are incomplete, future reviews and revisions will be produced.

Listings include the name of the institution, curator or person in charge, details of the sample, geographical representation, evaluation and documentation, and storage.

105

PN-AAL-852
MF \$1.08/PC \$6.76

Cacao, coconut, pepper, sugarcane and tea

Williams, J.T.; Damania, A.B.
U.N. Food and Agriculture Organization. International Board for Plant Genetic Resources
1981, iii, 50p. : En AGP: IBPGR/81/97
Directory of germplasm collections: industrial crops, v.5(1)

With the development of a global network of activities concerning plant genetic resources, it has become increasingly apparent that there is an information gap relating to what material is held where. This directory of cacao, coconut, pepper, sugarcane, and tea germplasm collections is one of a series being issued by the International Board for Plant Genetic Resources in an attempt to remedy this situation. Because the data, which are now being computerized, are incomplete, future reviews and revisions will be undertaken.



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Listings include the name of the institution, curator or person in charge, details of the sample, geographical representation, evaluation and documentation, and storage.

production (in Taiwan and the Philippines). Most papers contain a list of references, and a discussion report follows each section.

106

PN-AAL-875

MF \$1.08/PC \$3.51

Progress report; tissue culture for crops project: producing tissue culture techniques for use by plant breeding and agriculture

Colorado State University. Department of Botany and Plant Pathology; U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture
1 Oct 1982, 25p. : En
9364055
AID/DSAN-C-0273

On approximately 50% of the world's arable land, stresses from salt, aluminum, and drought constrain agricultural production. This illustrated report summarizes the efforts of A.I.D.'s Tissue Culture for Crops Project to promote the development of stress-tolerant wheat, rice, pearl and proso millet, and oats.

Following a brief discussion of project objectives, background information is provided on sodium, aluminum, and drought stress worldwide; the advisability of modifying crops to fit available environments; and the reasons for and methods by which tissue culture can contribute to plant improvement. Project facilities and administration are outlined. Project methods and accomplishments are detailed; specifics for each plant species and type of stress are covered. Finally, future experimental directions and goals are discussed. The report ends with lists of project personnel and 34 references (1958-81). (Author abstract, modified.)

107

PN-AAL-892

MF \$3.24/PC \$38.09

First international symposium on tropical tomato

Cowell, Robert
Asian Vegetable Research and Development Center
(International Symposium on Tropical Tomato, 1st, Shanhuia, TW, 23-27 1978)
Feb 1979, 290p. : En AVRDC publication 78-59
931115511
AID/DSAN-G-0057

Thanks to research conducted at the Asian Vegetable Research and Development Center (AVRDC), tomatoes can now be grown on farms where high temperatures and disease had previously prevented production of this crop. This report contains 27 papers presented at the first International Symposium on Tropical Tomato, held at the AVRDC in Taiwan.

The papers are presented in six sections covering: the tomato in the tropics (problems and progress, small-scale production, processing, consumption and use in Taiwan, commercial trials in New Guinea); physiology and plant nutrition (tropical fertilizer requirements, effect of temperature on growth and tomato fruit-set); diseases and pests (bacteria and fungi, insects, nematodes); tomato management (effect of excess water, cultivar, compost, benzyl adenine, multiple cropping, and mulch); varietal improvement (heat resistance, breeding for processing, germplasm resources, single-seed descent, leaf-spot resistance, improved root development); and tomato

108

PN-AAM-030

MF \$6.48/PC \$63.83

Chinese cabbage: proceedings of the first international symposium

Talekar, N.S.; Griggs, T.D.
Asian Vegetable Research and Development Center
(International symposium on Chinese cabbage, 1st, Tsukuba Science City, JP, 31 Mar-5 Apr 1980)
1981, x, 489p. : En
AVRDC publication no.81-138
9310075

Chinese cabbage is favored by Asian small farmers because of its rapid growth, its ability to readily generate cash income, and its value as a source of calcium, crude fiber, and vitamin C. Production of Chinese cabbage is limited, however, by the vegetable's sensitivity to heat and moisture, as well as by crop diseases and insect pests. Addressing these constraints, this report presents research papers from the first International Symposium on Chinese Cabbage.

Forty-five papers are presented on the following topics: general information (origin, evolution, taxonomy, and hybridization and development in Japan, Korea, Taiwan, and Bangladesh); plant protection; plant physiology; physiology of reproduction; and plant breeding. Each paper includes an abstract and a list of references. Appended are a list of participants, author and subject indexes, and a Chinese cabbage cultivar index.

109

PN-AAM-094

MF \$3.24/PC \$32.63

Cassava program: annual report 1981

International Center for Tropical Agriculture
CIAT series, no.02CE(3)82, Oct 1982, 259p. : En
9310865

Recent research suggests that consumption of cassava - the fourth most important source of dietary calories produced within the tropics - would increase if low-cost production and processing technologies were available. This report highlights biological and agronomic research conducted by the Centro Internacional de Agricultura Tropical (CIAT) toward this end.

The report covers the following areas of cassava research: (1) physiology; (2) soil and plant nutrition; (3) the use of mycorrhiza for plant nutrition; (4) entomology; (5) pathology; (6) tissue culture; (7) germplasm development; (8) varietal improvement; (9) cultural practices; (10) regional trials; (11) economics; (12) and cassava utilization. Progress in specific international research programs is also reviewed.

The authors conclude that small farmers can use production technologies developed by CIAT to increase yields, making cassava competitive in several markets. However, research results have only slowly affected small farmer production due to the long time required to test and multiply new genotypes. To increase the speed of germplasm transfer, more training in cassava tissue culture is needed. Finally, any program to increase production of cassava for use as animal feedstock must be integrated with far-reaching drying, processing, utiliza-



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tion, and commercialization activities, particularly in Latin America.

110

PN-AAM-095

MF \$2.16/PC \$13.00

Informe anual del programa de arroz 1981 (Rice program: annual report 1981)

International Center for Tropical Agriculture

CIAT series, no.02SR(2)82, Sep 1982, 104p. : Es
9310865

The Rice Program of the Centro Internacional de Agricultura Tropical (CIAT) aims to increase the production of high yield, high quality rice to meet growing needs in Latin America. This report discusses 1981 CIAT Rice Program activities in agronomy and market research.

The initial section deals with varietal improvements in irrigated rice regarding resistance to the fungus *Pyricularia oryzae* and other pathogens, early maturing varieties, and salt tolerance; and dry rice farming, its importance, and its classes of cultivation. The second section, on pathology, presents field and nursery research data on *P. oryzae*, leaf scorch, stem rot, and the bacteria, *Xanthomonas campestris*. Management and control of rice pathogens are also examined.

Agronomic practices and their effects on rice production are next discussed. Specifically covered are weed control, soils, lines and varieties and their nutritional requirements, planting methods, insect populations, and tissue cultures. The following section presents information on international rice production trials conducted for application to Latin America. Results of 1979-80 trials are analyzed, germplasm selection and distribution are evaluated, and observations made during international field trips are discussed.

Next, the economics of rice production and consumption and projected consumption and sales are examined; a case study of small farmer technology adaption is presented. The last section presents information on the multidisciplinary courses which CIAT has offered to small farmers in various L.A. countries. A list of CIAT and related publications is included.

111

PN-AAK-998

MF \$1.08/PC \$8.32

Low-input technology for managing oxisols and ultisols in tropical America

Sanchez, Pedro A.; Salinas, Jose G.

Advances in Agronomy, v.34, 1981, p.279-406 : En
9310525

AID/ta-C-1236

With rising oil prices limiting the intensive use of purchased inputs in tropical agriculture, research is being directed towards a low-input soil management technology which minimizes the use of scarce inputs by planting species that are more tolerant of soil constraints. This report assembles components of a low-input soil management technology adapted to the acid, inherently infertile oxisols and ultisols of the American tropics.

The report first describes the geographic distribution and importance of oxisols and ultisols and of soil-related production constraints, together with the conceptual basis of low-input technology. The bulk of the paper discusses the main components of low-input technology. These include: selection of land with appropriate soil and slope and identifiable soil

constraints; use of plant species tolerant to acid soil and of land clearing methods allowing rapid establishment and low-cost maintenance of ground cover; managing soil acidity with emphasis on deep root development; eliminating soil acidity without using lime; managing phosphorous fertilizers; and maximizing the use of biological nitrogen fixation and identifying and correcting deficiencies of other essential plant nutrients. A list of 276 references (1951-81) is attached.

112

PN-AAL-284

MF \$1.08/PC \$8.32

Analysis of levels, patterns and determinants of fertilizer use on farms in selected regions of semi-arid tropical India

Jha, Dayanatha; Sarin, Rakesh

International Crops Research Institute for the Semi-Arid Tropics

Economics program progress report, no.25, Oct 1981, 63p. :
References, p.49-50, En

To determine the factors affecting farmer fertilization decisions in semi-arid, tropical India, this paper examines data from a household survey in six villages, two in each of India's three major agro-climatic zones.

Against a background description of the study areas (Sholapur, Akola and Aurepalle, and Mahbubnagar), survey data are presented on the extent, levels, allocation, rates of application, and agronomic management of fertilizers and on the use of organic manures. Data are subjected to regression analysis on two levels, one stressing inter-farm variability in fertilizer use, the other concerned, in addition, with the influence of plot level characteristics.

Analysis revealed that fertilizer adoption was higher and more consistent in areas which are highly irrigated and geared to commercial crops and that fertilizer responsiveness was the crucial variable affecting fertilizer use decisions. This implies that irrigation development will go hand in hand with preference for high-value crops to the neglect of low-response, dry crops. Included are recommendations for further research and for fertilizer strategies. The research data are appended.

113

PN-AAL-336

MF \$1.08/PC \$11.31

Glossaire de la science des sols (Glossary of the soil sciences)

Ferguson, Carl E.

U.S. Embassy (France). Regional Technical Aids Center; U.S. Agency for International Development

Techniques Americaines series, no.140, n.d., (171p.) : Fr, En

A French/English and English/French glossary of terms currently used by soil scientists is presented for use by students specializing in agronomy and soil science and by translators of specialized documents. Certain elementary terms have been incorporated for use by students not well versed in English or French. Gender is indicated in the French part of the glossaries, and the feminine form of adjectives is provided when different from the masculine. The glossaries are followed by a list of 200 English verbs and 200 French verbs frequently used in soil science.



114

PN-AAL-758
MF \$1.08/PC \$3.25

Economics of technology options for deep vertisols in the relatively assured rainfall regions of the Indian semi-arid tropics

Ryan, James G.; Sarin, Rakesh

India. Ministry of Agriculture; Indian Council of Agricultural Research; International Crops Research Institute for the Semi-Arid Tropics

(Seminar on management of deep black soils, New Delhi, IN, 21 May 1981)

21 May 1982, 24p. : References, p.24, En

By improving the drainage of deep vertisols in the Indian semi-arid tropics, it is possible to grow crops during the rainy season and increase farmer profits as much as 600%. This report analyses the economic benefits and policy implications of this improved technology.

The new technology allows maize to be intercropped with pigeonpea and utilizes graded broadbeds and furrows; extra profits from the new system can pay the cost of a wheel tool carrier - needed to form the broadbeds and furrows - in less than a year. However, even if broadbeds and furrows are not used, farmers' profits can still increase by 400% in comparison to the traditional rainy season fallow cropping system. In addition, the technology greatly increases the demand for human and bullock labor, allowing economic benefits to spread beyond farmers.

However, various policy issues must be addressed before these economic benefits can be realized. The new technology must be tested on farms; farmers must be provided loans and/or wage payments to purchase draft power and make land improvements; fertilizer distribution must be improved; and farmers must be trained to use the technology.

115

PN-AAL-833
MF \$1.08/PC \$5.52

Influence of soil characteristics on the survival of Rhizobium in soils undergoing drying

Chao, Wei-Liang; Alexander, Martin

Cornell University. Department of Agronomy; U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture

Soil science society of America journal, v.46(5), Sep-Oct 1982, p.949-952 : En

9310127; 931012711

AID/CSD-2834; AID/DSAN-G-0090

When Rhizobium strains are introduced into soils as a means of increasing leguminous crop yields, they frequently do not survive in sufficient numbers to be effective during the following season. This study examined whether certain soil characteristics could be correlated with the extent of survival of Rhizobium as the soils underwent drying.

The numbers of *R. meliloti* and *R. phaseoli* fell markedly as the soils dried, but their abundance declined slowly in soils maintained in an air-dry state. The number of surviving cells increased if the bacteria were added to sterile soil and allowed to grow before desiccation was extensive. Survival of both species was poor in soils with pH values below 5.7. The number of survivors of *R. meliloti*, but not *R. phaseoli*, decreased as the content of clay and water at 15 bar suction increased. At organic matter levels below but not above 2-3%, the abun-

dance of survivors of these rhizobia was related to the organic carbon content of the soil. Survival of *R. phaseoli* was inversely related to the content of total available aluminum in the soils, but the number of survivors of the two species was not correlated with available phosphorus levels. (Author abstract)

116

PN-AAM-097
MF \$1.08/PC \$7.02

Dryland soil resources

Dregne, H.E.

U.S. Department of Agriculture. Foreign Agricultural Service; U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture

Sep 1982, 44p. : References, p.41-44, En
53-319R-2-153

Some 75% of the world's dryland soil problems could be eased by increasing soil organic matter content. So concludes this review of the causes of dryland soil problems and methods for controlling them.

The paper first describes the geographic distribution of dryland agricultural regions, which cover about 27% of the world's land area, and identifies four types of dryland rainfall patterns and their relationship to soil characteristics. The principal soil problems of dryland agriculture - low inherent fertility, erosion by water and wind, crusting and hardening, compaction by tillage, poor drainage, salinization, and problems associated with stony and shallow soils - are examined. Control methods are then outlined for all of the problems noted, except for stony and shallow soils, which are not amenable to correction. Lastly, the dominant soil problems in Africa, including low inherent fertility and surface soil hardening, are discussed. Appendices present detailed information on climatic zones, soil characteristics, dryland soil management, the characteristics of soil orders, research information sources, and dryland soil research needs. Fifty-three references (1937-82) are cited.

117

PN-AAL-388
MF \$1.08/PC \$7.67

Circular concrete irrigation turnout: design and construction

Trout, Thomas; Kemper, W.D.; Hasan, Hafiz Sadrul

U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture; Colorado State University. Engineering Research Center; Utah State University. Department of Agricultural and Irrigation Engineering

Apr 1982, ii, 45p. + attachment : En Handbook no. 1
9310489; 9311007
AID/DSAN-C-0058

Improved conveyance channel water control structures are very important for bettering on-farm water management and increasing irrigation efficiency. This handbook describes the design, construction, and use of an irrigation channel turnout for rotational distribution systems in Pakistan.

Initial sections provide a background explanation of the need for technological improvements in water diversion structures in traditional irrigation systems which suffer high losses of scarce water resources. The authors then describe the evolution of circular concrete check and turnout structures which



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was designed to be structurally sound, technologically efficient (i.e., made of local materials), and socially acceptable. Initial structural flaws and subsequent improvements to achieve optimum performance are indicated, allowing inferences on how irrigation structures to meet other needs might be developed. Explicit, illustrated instructions for fabricating and installing the concrete turnouts and panels are given in succeeding sections. Finally, alternatives to the basic circular design are examined. Information on the manufacture of concrete for small jobs is appended.

118

PN-AAL-390

MF \$1.08/PC \$3.38

Irrigation pumping; water management synthesis project

Griffin, Richard E.; Hargreaves, George H.; et al.
U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture; Consortium for International Development; Colorado State University. Engineering Research Center; Utah State University. Department of Agricultural and Irrigation Engineering

Jun 1982, 23p. : En Planning guide no. 3

Also available in Spanish and French from the publisher.
9311007

AID/DSAN-C-0058

In many areas of the developing world, pumping water may be the only solution to irrigating lands needed to increase agricultural production. This illustrated report is designed to serve as a guide in planning water pumping projects.

First, power sources (gasoline, diesel, electricity, and propane or natural gas) are reviewed and alternatives for powering mechanical pumps are compared. Three types of mechanical pumps - centrifugal, propeller, and turbine - and their particular applications are then considered. Explanations follow of the need to design pumping plants according to pumping needs (water volume and lift requirements) and energy availability and to select and maintain the proper pump for maximum efficiency. To insure the long-term effectiveness of a pumping project, knowledge of local legal and administrative structures and of soil characteristics, crop water requirements, and the quality and quantity of the available water supply is essential, as are training and extension programs.

119

PN-AAL-391

MF \$1.08/PC \$4.29

Farm irrigation structures; water management synthesis project

Robinson, A.R.
U.S. Agency for International Development. Bureau for Science and Technology. Office of Agriculture; Consortium for International Development; Colorado State University. Engineering Research Center; Utah State University. Department of Agricultural and Irrigation Engineering

Sep 1982, 29p. : En Planning guide no. 4

Also available in Spanish and French from the publisher
Utah State University. Agricultural and Irrigation Engineering:
joint publisher

9311007

AID/DSAN-C-0058

Although well-designed irrigation control structures are essential to successful on-farm water management, farm irrigation structures are often the most neglected part of an irrigation system. This illustrated report examines why farm irrigation structures are needed and what types of structures (turnouts, measuring flumes, drops, divisors, checks, gated pipes, spiles, siphons, and drops) are required.

Design considerations are examined and construction and installation needs are outlined. The importance of proper system maintenance is stressed. Finally, to improve on-farm irrigation structures, the authors recommend establishing educational programs for farmers, farmer organizations, and government agencies; having government agencies furnish designs for irrigation structures; and evaluating these structures after construction.

120

PN-AAL-614

MF \$1.08/PC \$11.57

Feasibility studies and evaluation of irrigation projects: procedures for analyzing alternative water distribution systems in Egypt

McConnen, R.J.; Aal, Farouk Abdel; et al.
U.S. Agency for International Development. Bureau for Near East. Egypt; Egypt. Ministry of Irrigation. Water Distribution Research Institute. Research Center; Consortium for International Development; Colorado State University. Engineering Research Center

Jul 1982, vi, 41p. + 6 appendices : References, p.79, En
Technical report no.12

2630017

AID/NE-C-1351

There exist today a host of opportunities for rebuilding Egypt's existing irrigation system and developing new systems. This report outlines a methodology for comparing various irrigation water distribution systems prior to implementing an irrigation program.

Following a brief discussion of benefit/cost analyses, the authors recommend use of partial-budget analyses (a related but simplified approach), largely because the data needed for detailed analysis are not always available. The partial-budget methodology presented here centers on the use of a set of worksheets (provided in an appendix). As an example of partial-budget analysis in action, the worksheets are used to analyze an irrigation system located in Upper Egypt near El Minya.

The report also discusses the relationship between partial-budget analysis and net present value analysis and compares the results obtained by each method. Finally, various methods for extending the usefulness of the analytical methods (e.g., post-analysis for design innovation and identification of missing data) are discussed.



121

PN-AAL-683

MF \$1.08/PC \$4.16

Rotation water distribution system vs. continual flow water distribution system

Mona, El-Kady; Wolfe, John; Wahby, Hassan
Consortium for International Development; Colorado State University. Engineering Research Center; U.S. Agency for International Development. Bureau for Near East. Egypt; Egypt. Ministry of Irrigation. Water Distribution Research Institute. Water Research Center

Egypt water use and management project: technical report, no.20, Apr 1982, vii, 25p. : En

2630017
AID/NE-C-1351

Two types of irrigation systems introduced in Egypt under A.I.D.'s Water Use and Management Project, the traditional rotational system and the continuous flow system, were compared for effectiveness in water distribution as herein reported.

The two systems were compared on nine counts: (1) water savings; (2) acceptability to farmers; (3) equitable distribution of water; (4) length of interval between irrigations; (5) effect on water table; (6) land savings; (7) effect on seepage from canals; (8) effect on growth of weeds in canals; and (9) crop yield. Even allowing for generous margins of error to compensate for data inadequacies, results show that continuous flow irrigation was a marked improvement over the rotational system. The former freed land, eliminated detrimental fluctuations in the water table, and reduced water waste by 1,000,000 cubic meters per year.

To achieve full benefits, farmers will need to adapt to this new system; the system should be directed by an irrigation engineer who regulates daily water flows. Recommendations for future continuous flow constructions and rotational flow modifications are made. (Author abstract, modified).

122

PN-AAL-861

MF \$1.08/PC \$1.30

Irrigation system management research and selected methodological issues

Bhuiyan, Sadiqul I.
International Rice Research Institute
*IRRI research paper series, no.81, Oct 1982, 9p. :
References, p.8-9, En*

Recent field research findings indicate there is great potential to improve the performance of existing irrigation systems in Asian rice growing regions. Crop yield, water use efficiency, irrigation efficiency, water adequacy, relative water supply, and water distribution equity criteria can be used to assess irrigation system performance. This paper discusses the requirements for using these criteria and their relative merits and demerits. Methodological options available for evaluating field research on irrigation system management improvement are analyzed. Critical hydrologic and hydraulic factors which enable the determination of water-related criteria for irrigation system performance evaluation are then examined in relation to field considerations and applicability requirements. (Author abstract, modified)

123

PD-AAJ-696

MF \$1.08/PC \$8.58

Workshop on development and African pastoral livestock production

Little, Peter D.
Institute for Development Anthropology, Inc.; U.S. Agency for International Development. Bureau for Africa. Office of Development Resources

(Workshop on development and African pastoral livestock production, Marriottsville, MD, US, Nov 1981)

Mar 1982, : En
9300085
AFR-0085-C-00-1033

The workshop reported here brought together some 40 specialists to help formulate an A.I.D. strategy for livestock development in arid and semi-arid Africa.

After an introductory section on workshop materials and objectives, the following problems constraining livestock development in Africa are identified: inappropriate government policies; poor institutional capacity; inadequate technical knowledge; and paucity of animal feed and veterinary services. Next, a general livestock development strategy to address these problems is formulated. The strategy focuses on improving national policies; implementing longer, more flexible support programs than are usually provided; increasing the number of trained host government personnel to manage livestock research and service institutions; and locating more project investments in local producer organizations. Key indicators, e.g., population mobility, income distribution, rainfall patterns, that should be considered when designing African livestock projects and programs are identified; the importance of timely and appropriate evaluations is stressed.

A final section summarizes workshop discussions on land tenure and grazing control, production and equity, and the comparative advantages of animal-based and mixed production systems. Appended are the workshop agenda, a list of participants, and a livestock issues paper.

124

PN-AAL-115

MF \$2.16/PC \$16.12

Ngaynaaka: herding according to the Wodaabe

Maliki, Angelo B.
Niger. Ministry of Rural Development; U.S. Agency for International Development. Bureau for Africa. Niger
Rapport Pre'liminaire - Discussion Paper, no.2, Nov 1981, 118p. : En

French version: PN-AAL-780
6830202

There is an inextricable bond between the Wodaabe, a traditional pastoral people in Central Niger, and their cattle. This report provides an introduction to the herding practices of the Wodaabe.

First, a general overview is given of herd composition and management, basic techniques related to the gestation and birth of a calf, and an introduction to the Wodaabe's general knowledge of 71 forage crops and 65 animal diseases. The second part gives a more detailed analysis of certain magical, economic, and social implications of Wodaabe animal husbandry practices, traditional herding strategies, and the close relationship of the herd to many phases of social life. The third



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section presents reflections of the Wodaabe on their own experiences and traditions.

Although still reluctant to cooperate in some health campaigns, the Wodaabe have, with their recent move to the arid zone of the Sahel, become more receptive to technical help from outside. It is concluded that training programs for veterinary auxiliaries would be acceptable to the Wodaabe if conducted with respect for the stock of traditional knowledge and the herders versed in it.

125

PN-AAL-199

MF \$3.24/PC \$30.03

Report on animal husbandry among the Ngok Dinka of the Sudan

Niamir, Maryam

Harvard University. Institute for International Development.

Rural Development Studies

26 Mar 1982, 185p. + appendices : En

6200025

AFR-G-1344

Among the Ngok Dinka in Abyei, Sudan, cattle fulfill various sociocultural needs as well as contributing economically, primarily through milk production. Reported here are the findings and recommendations from a 4/80-4/81 survey examining the Ngok Dinka livestock production area.

First, the study area and its human population are described; the area provides grazing for the herds of various tribes who, despite traditional differences, have evolved an efficient system of exchanging pasturage areas. Next, the livestock population (27,000 cattle and 42,000 smaller stock) is discussed in relation to range resources; an initial approximation of the range carrying capacity is presented and the need to guard against seasonal overgrazing is pointed out. A detailed look at livestock management practices and a discussion of disease problems are followed by a consideration of factors affecting livestock productivity and concluding observations on livestock marketing. Recommendations are to increase productivity through water source and rangeland improvements, provision of supplementary feed, and through an animal health training program to promote the use of drugs and disease prevention techniques among herders. A 29-item bibliography (1954-80) is appended.

126

PN-AAL-345

MF \$1.08/PC \$7.93

Market for livestock from the Central Niger Zone

Makinen, Marty; Ariza-Nino, Edgar J.

University of Michigan. Center for Research on Economic Development; U.S. Agency for International Development. Bureau for Africa. Office of Development

Mar 1982, v, 55p. : En

French edition PN-AAL-441

6830202

AFR-0202-C-00-1095-00

The livestock market in the Niger Range and Livestock Project zone has changed considerably in recent years. This report analyzes the impact of these changes on designing future project activities in the zone.

The recovery from the drought of the early 1970's and the recuperation of pre-drought herd levels indicates a need to realign market capabilities with the long-term carrying capacity of the land. Radical improvements in road transport between Niger and Nigeria and growing Nigerian demand for meat have aided the recovery of and strengthened Niger's livestock system. Lastly, a significant increase in the use of young male cattle for animal traction, and cattle fattening by Nigerien and Nigerian farmers should aid the pastoral economy.

In addition, the report describes the 17 cattle markets visited and the attendant slaughter facilities; Niger's restrictive cattle export policy; the market power of intermediaries; and the tanning sector. It is recommended that additional market observations be made, a herd composition survey be conducted, and export restrictions be lifted.

Appendices provide information on the cost of transporting cattle to Lagos, an in-depth study of slaughter data from Maradi, and a proposal for a market monitoring unit for the next phase of the project.

127

PN-AAL-401

MF \$4.32/PC \$38.61

Assessment of the Belize livestock sector

Winrock International; U.S. Agency for International Development. Bureau for Latin America and the Caribbean. Regional Development Office

31 Oct 1982, x, 223p. + 7 appendices : En

LAC-0000-C-00-2041-00

Belize's livestock sector has great potential for contributing to the country's overall economic well-being. Serious constraints to the realization of this potential may be alleviated in part, according to this livestock sector analysis, by an integrated program of financial and technical assistance supported by A.I.D. in coordination with other individual and institutional efforts in Belize.

The body of the report covers the various livestock industries - cattle, swine, dairy, sheep, goat, and poultry. Feed resources such as pasture and grains are examined, as are livestock demand and the marketing structure. Lastly, Belize's education, training, and agricultural credit and agricultural policies are reviewed.

The final section of the report proposes a list of program recommendations for A.I.D.'s consideration and endorses a single, multifaceted program to reduce administrative costs and promote coordination among complementary activities. Activities supported by other donor institutions, a list of contacts, and a 5-page list of references (1959-82) end the paper.

128

PN-AAL-747

MF \$1.08/PC \$4.29

Types de maladies animales dans la region du projet gestion des paturages et elevage de la zone pastorals du Niger (Types of animal illnesses in the area of the Niger range and livestock project)

Sollod, Albert E.

U.S. Agency for International Development. Bureau for Africa. Niger; Niger. Ministry of Rural Development

Nov 1981, 28p. : References, p.26-28, Fr Discussion paper no.4

6830202



In the region of the Niger Range and Livestock Project, livestock diseases are affected by seasonal changes. A study of these diseases, herein reported, was conducted in two phases: the first during the dry season, under difficult conditions of insufficient food and water, high temperatures, and long forced marches in search of pasturage and water; the second phase during the rainy season under more favorable conditions. Some 24 diseases as well as infestations of internal and external parasites are described; the former are categorized as to greater, lesser, or uncertain economic importance.

In general, the study found that the animals were quite resistant to diseases, especially infections. Nutrition and habitat are key factors in building resistance. There is a periodicity in infectious diseases, the most damaging time occurring at the end of the dry season when nourishment is very scarce. Another major problem is the use of contaminated water. When sheep are allowed a second reproductive cycle and give birth at the end of the dry season their young can easily succumb to pulmonary and other diseases. Goats are less susceptible to pulmonary problems – as their food is obtainable most of the year and births are numerous – unless they are competing with camel herds for grazing. Although most herdsmen in the area understand the health needs of their animals, circumstances often force them to consume products from infected animals. A 42-item bibliography (1966–81) is appended.

129

* PN-AAK-986

MF \$5.40/PC \$56.81

Biology and culture of tilapias

Pullin, R.S.V.; Lowe-McConnell, R.H.
International Center for Living Aquatic Resources
Management

(International Conference on the Biology and Culture of
Tilapias, Bellagio, IT, 2–5 Sep 1980)

1982, viii, 432p. : References, p.359–389, En

* Available from ICLARM: hard cover, \$17.50 surface mail
and \$29.50 air mail; soft cover, \$13.00 surface mail and
\$25.00 air mail

The cultivation of tilapias, an African fish which is a major protein source in many developing countries, is hampered by lack of data on the fish's biology and inadequate cooperation between research biologists and fish culturists. This paper reports the proceedings of a conference held to bring together biologists and culturists to review current data and research on tilapias and define research needs for improving tilapia culture.

A total of 15 papers presented at conference sessions on tilapia biology, physiology, and culture are provided. The papers cover: (1) tilapias' taxonomy and speciation, ecology and distribution, life histories, and their characteristics when in natural fish communities; (2) tilapias' environmental and reproductive physiology and quantitative and qualitative aspects of their feeding, digestion, and growth; (3) tilapia culture in ponds and cages and tilapia diseases; (4) the use of genetic markers for identifying species and sex; (5) tilapia hybridization; and (6) control of tilapia reproduction and problems in the mass production of hybrid fry. Also provided are a general discussion of the biology and culture of tilapias, a consensus statement of the conference participants, and a list of future research requirements. Appended are a list of 763 references (1849–1981), a general index and indices by species and water bodies, and a list of conference participants.

130

PN-AAL-311

MF \$1.08/PC \$4.29

Applied genetics of Tilapias

Wohlfarth, Giora W.; Hulata, Gideon I.
International Center for Living Aquatic Resources
Management

ICLARM studies and reviews, no.6, 1981, vii, 26p. : En

Excellent growth rates, disease resistance, and market acceptability recommend the fish species tilapias, already a major source of protein in developing countries, for culture on a wider scale. This literature review collates existing information on the applied genetics of tilapias so as to assess the usefulness of previous work and to suggest future directions for research.

The present world production of tilapias is relatively low, despite their high potential for aquaculture. Most research efforts towards their husbandry have been aimed at solving the major problem in tilapia culture: uncontrolled reproduction. Other attributes of potential importance, such as temperature and salinity tolerance, feeding habits and growth capacity, have been largely neglected. Real attempts at genetic improvement in tilapias have been restricted to the production of all-male hybrid progeny. A rational choice of species or isolates, according to economically important traits instead of locally available species, could be a first step in increasing production by genetic methods. (Author abstract, modified)

131

PN-AAL-312

MF \$2.16/PC \$20.15

Economics of the milkfish fry and fingerling industry of the Philippines

Smith, Ian R.
International Center for Living Aquatic Resources
Management; Southeast Asian Fisheries Development
Center. Aquaculture Department

ICLARM technical reports, no.1, 1981, xiii, 148p. : En

The fry and fingerling industry of the milkfish *Chanos chanos Forskal* in the Philippines allegedly suffers from certain imperfections – an annual shortage of catch necessary to meet the stocking requirements of 176,000 ha of fishponds; high fry mortality rates during transport; failure of the pricing system to perform its spatial and form allocative functions; and exploitation of fry gatherers and pond operators by the core of middlemen and nursery pond operators around whom the whole fry and fingerling industry has developed. These alleged problems provide the rationale for various government policies affecting the fry and fingerling industry.

This study indicates a higher level of industry performance than hitherto supposed. In 1974, an estimated 1.35 billion fry were caught, a number adequate to meet annual stocking requirements. Allegations of fry shortage were based on simultaneous underestimation of catch and overestimation of stocking requirements and were traced to temporary price increases resulting from expanded fishpen area, which subsequently declined. Fry storage and transport mortality rates of 8.7% and 6.6%, respectively, compared with a mortality rate of 54% during rearing, indicated that major technical inefficiencies arise in fishponds rather than in the distribution system. Of every 100 fry caught, 38 are harvested at marketable size.

Monthly average fry prices among 17 major trading regions were significantly correlated, indicating a high level of information flow in the industry. An examination of the concession



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system which restricts first sale opportunities of gatherers indicated that concessionaires are unable to capture their full monopsony advantage due to the "competitive fringe" of smugglers. Rather than exploitation, the concession system is a form of indirect municipal tax on fry gatherers.

Since the fry industry is a 57 million peso per year industry upon which approximately 170,000 people directly and indirectly depend, it is suggested that the location of future milkfish hatcheries and timing of production be planned such that they complement rather than displace the natural fry fishery and distribution system. (Author abstract, modified)

132

PN-AAL-337

MF \$1.08/PC \$1.95

Hanging culture of the green mussel (*mytilus smaragdinus chemnitz*) in Thailand

Chonchuenchob, Pradit; Chalayondeja, Kasemsant;

Muttarasin, Kosol

International Center for Living Aquatic Resources
Management

ICLARM translations, no.1, 1980, 12p. : En

Original article appeared in *Thai Fisheries Gazette* 32(3):
219-229

Green mussels, *Mytilus smaragdinus chemnitz*, are cultivated in Thailand using the hanging method, which employs scarce and costly wooden stakes. Mussel cultivation could be significantly expanded if alternate cultivation materials could be developed. This paper reports on an experiment to use Manila rope for the hanging method of green mussel culture.

For the experiment, conducted in Bang-pakong District, Chachoengsao Province from 11/77-8/78, Manila ropes 2 m in length were suspended in sea water. Data were collected on the monthly density of mussel spat on ropes, their rate of growth, and environmental factors. Mussels reached market-

able size, 5.5-6.0 cm, in 8 months, after which ropes began to deteriorate.

Thus, the hanging method can be used for green mussel culture in Thailand although Manila rope is not a suitable material. Future experiments should be aimed at identifying cheap and durable cultivation materials. Data and statistical tables are appended. (Author abstract, modified)

133

PN-AAL-416

MF \$1.08/PC \$9.23

Initial evaluation of fishery resources in Panamanian small impoundments

Scully, Richard J.

Auburn University. Department of Fisheries and Allied

Aquaculture; Panama. National Director of Aquaculture
25 Aug 1982, i, 66p. : En

In order to formulate recommendations for research and management of small reservoir fisheries in Panama, the fishery potential of six existing small irrigation and hydroelectric reservoirs was evaluated. This report describes the research conducted and makes recommendations based on evaluation of the data.

The report first describes the fish and water sampling equipment and methods used, as well as the physical characteristics of the water, the fish catch rate, and the species encountered for each reservoir studied. Pond stocking and management recommendations aimed at restructuring or augmenting the existing fish communities are made in each case, with consideration given to fish predator-prey relationships and the availability of or need to provide for species-specific nutrients. Finally, general recommendations for managing small reservoir fisheries in Panama, including a sequence of monitoring activities for fish stock development, are provided.

Details on pond physical and chemical parameters measured, on fish species mentioned in the report, and on impoundment equipment are included in appendices.



Unhusled IR-8 rice, ready for milling.



134

PN-AAJ-622

MF \$2.16/PC \$23.66

PL 480 Title II: a study of the impact of a food assistance program in the Philippines

Blumenfeld, Stewart; Flores, Maria-Bernardita; et al.

U.S. Agency for International Development. Bureau for Asia. Philippines

A.I.D. program evaluation report, no.6, Aug 1982, xii, 147p. + 6 appendices : En
492PL02

The relatively high prevalence of malnutrition among pre-school children in the Philippines is a persistent and serious problem. This evaluation is designed to assess the nutritional impact, cost-effectiveness, and achievements of A.I.D.'s P.L. 480, Title II program in the Philippines and to produce information which will enhance the program's effectiveness.

It is concluded that the Maternal/Child Health (MCH) and Day Care programs are effective in combatting the highest priority malnutrition (in children under 6), and so have the greatest nutritional impact (as evidenced by weight gains by beneficiaries), but that School Feeding addresses a lower nutritional priority and does so less effectively. MCH and, to a lesser degree, Day Care were also found to be the most cost-effective. The Food for Work program, while providing positive and equitable community benefits, failed to have a substantial or sustained impact on individual participant households. More regular delivery of commodities in greater amounts is required for optimum program effectiveness.

In future Title II allocations in the Philippines, MCH and Day Care should be accorded the highest priority, followed by the School Feeding and then Food for Work programs until the latter two programs are phased out. Other Child Feeding and Adult Feeding activities lack integrated developmental objectives and should have fifth priority, but on strictly humanitarian grounds. The Snack Food program should have lowest priority, in spite of its revenue-generating potential, since its audience is adequately nourished and more economically advantaged.

Lessons learned include the need for better assessment of the long-term impact of supplementary feeding programs and for increased long-term, grass-roots involvement of nutritionists and nutrition planners in Title II decisionmaking. Experience also suggests that programs covering the family as a unit will be more cost-effective than those benefiting children alone.

135

PN-AAJ-623

MF \$2.16/PC \$24.18

Sri Lanka: the impact of PL 480 Title I food assistance

Steinberg, David I.; Adamczyk, Christine; et al.

U.S. Agency for International Development. Bureau for Program and Policy Coordination. Office of Evaluation

A.I.D. project impact evaluation report, no.39, Oct 1982, 38p. + 9 appendices : Bibliography, attached, En

The Government of Sri Lanka (GSL) has a long history of food support to its population, aided since 1956 by a P.L. 480 Title I program which has provided some \$277 million worth of food - mainly wheat flour and wheat. This impact evaluation is the first of a series of country P.L. 480-I studies.

Title I continued to provide food aid despite wide changes in U.S. policy and in Sri Lanka's political and economic life. Apparently, the commodities did not affect domestic rice pro-

duction, which increased; the relatively minor production of coarse grains was reduced, however. While the wheat and flour did not reach many of the rural poor - who prefer to purchase rice, using food stamps - its availability may have freed rice for broader consumption. Groups at high-risk of malnutrition have not received any special benefits.

The self-help measures in the Title I agreements have been virtually superfluous because the GSL has on its own pursued sound rural development policies. At any rate, proceeds from commodity sales were credited to a general account and cannot be identified. On balance, the program has probably contributed positively to U.S.-Sri Lanka relations and has been modestly helpful in relieving U.S. grain surpluses and opening sales possibilities for U.S. firms. Title I provides Sri Lanka with a significant positive balance of payments and is treated by the GSL as a multi-year resource, although it is programmed annually. An innovative multi-year commitment of food aid which would not require GSL policy reform nor involve Title III administrative costs is recommended.

The P.L. 480 experience in Sri Lanka suggests that Title I is policy neutral in its effects, despite attempts to integrate it into overall assistance strategies. Self-help measures need not be quantified annually when a country's basic policies are sound; if self-help measures must be quantified, an adequate monitoring system is needed. This evaluation also shows that Title I commodities do not have to be consumed directly by targeted groups; it would be well for donors to understand local food demand patterns. Finally, provision of Title I commodities requires detailed analysis of a country's ability to forecast production and consumption. Seven reports on various aspects of Sri Lanka's food supply are appended.

136

PN-AAL-120

MF \$1.08/PC \$10.53

Nutritious foods produced by low-cost technology

Harper, Judson M.; Jansen, G. Richard

Colorado State University. Department of Agricultural and Chemical Engineering; Colorado State University.

Department of Food Science and Nutrition; U.S.

Department of Agriculture. Office of International

Cooperation and Development

LEC report, no.10, Apr 1981, vii, 72p. : En

Low-cost extrusion cookers (LEC's), which combine, heat, and precook food blends and improve both their nutritional value and palatability, are an ideal technology for manufacturing nutritious foods from cereals or legumes and oilseeds. This report summarizes results of a joint U.S. Department of Agriculture/Colorado State University project to test three cookers - the Brady (#2106), Insta-Pro (#500 and #2000), and the Anderson (4.5").

Initial discussion of alternative low-cost cooking methods and of the capabilities and limitations of the three cookers is succeeded by an account of project efforts to evaluate the nutritional and functional characteristics of LEC products, especially those similar to Title II, Food For Peace products such as corn/soy blend (CSB) and instant Corn/Soy/Milk (ICSM). Typical manufacturing costs of an LEC plant are indicated and the range of LEC products detailed. Finally, pilot plants established under the project in Sri Lanka, Tanzania, Costa Rica, and Guyana and project technology transfer efforts are described.

The project showed that LEC's can produce instant products having a high caloric density, a protein quality similar to



milk, good shelf life, and low bacterial counts. A list of publications providing additional information is appended.

137

PN-AAL-277

MF \$1.08/PC \$3.77

International survey of methods used for evaluation of the cooking and eating qualities of milled rice

Juliano, B.O.

International Rice Research Institute

IRRI research paper series, no.77, May 1982, 28p. :

References, p.23-28, En

A survey of methods used by rice scientists for the evaluation of the cooking and eating qualities of milled rice was made in 1981. This report represents the replies of 41 scientists in 27 countries.

Thirty-six respondents cooked rice for texture evaluation; of those, 20 used sensory evaluation, 11 used instruments, and 5 used both. Details of the methods are discussed and compared. Of the 41 respondents, 30 determined amylose, 27 determined alkali spreading value, and 17 screened for gel consistency. Most respondents were interested in cooperative testing of cooking methods. Possible areas for cooperative testing were comparative hardness of rice cooked to 75% water content by cooker and excess-water methods, single-grain versus bulk cooked rice for hardness estimation by instruments, grain elongation during cooking, and amylography. Included is a 115-item list of references (1941-82). (Author abstract)

138

PN-AAL-281

MF \$1.08/PC \$6.76

Lesotho: a guide to the literature

Israel, Ron; Nestor, Joanne; et al.

International Nutrition Communication Service; U.S. Agency for International Development. Bureau for Development Support. Office of Nutrition

Maternal and infant nutrition reviews, Dec 1981, vii, 41p. :

Bibliography, p.35-39, En

9311010

AID/DSAN-C-0209

A guide to available literature on maternal and infant nutritional status, beliefs, and practices in Lesotho is presented in this report. The literature is classified as follows: nutrition and health status; dietary beliefs about pregnancy, lactation, breast milk substitutes, weaning, illness, and cure; dietary practices, covering food sources, the standard dietary pattern, and recent changes in diets; the correlation of nutritional status with child malnutrition; and health and nutrition policies, including maternity legislation, an infant milk marketing code, and the Third Five-Year Health Plan, and programs, including those of the Government of Lesotho, donors, and voluntary agencies. A brief overview of the information available under each category is presented.

According to a 1981 consultant's report, Lesotho's chief nutritional problems are reducing remaining nutritional deficiencies, reducing reliance on food aid, and facing the population increases that would result from a return of Basotho miners from South Africa.

Brief commentaries on nutrition-related issues and a 12-item annotated bibliography (1971-81) are appended, as is a 24-item list of literature unavailable for review.

139

PN-AAL-297

MF \$2.16/PC \$15.34

Thailand: a guide to the literature

Israel, Ron; Nestor, Joanne; et al.

International Nutrition Communication Service; U.S. Agency for International Development. Bureau for Development Support. Office of Nutrition

Maternal and infant nutrition reviews, Dec 1981, x, 96p. :

Bibliography, p.73-96, En

9311010

AID/DSAN-C-0209

Literature available in the United States on maternal and infant nutrition in Thailand is surveyed in this report. Data are categorized in terms of nutritional status, dietary beliefs and practices, and the correlation of nutritional status with selected socioeconomic factors such as education, employment, and income at the national, urban, and rural levels. A 59-item annotated bibliography (1972-81) is provided, along with lists of other references and of current Thai Government, USAID/T, international agency, and PVO nutrition-related programs and policies.

Although Thailand produces enough food to satisfy its nutritional needs, several major nutritional problems are prevalent, the most widespread of which is protein energy malnutrition (PEM). PEM is mainly caused by social inhibitions to breastfeeding in urban areas and insufficient supplementary foods in rural areas. Improved hygiene and the 1977-81 Five-Year Plan have helped to reduce infant mortality, but PEM remains high, especially in the northeast and among Bangkok slum children. A National Food and Nutrition Committee's Five-Year food and nutrition program is currently addressing these problems.

140

PN-AAL-350

MF \$3.24/PC \$28.47

Socialization for scarcity: child feeding beliefs and practices in a Haitian village

Alvarez, Maria D.; Murray, Gerald F.

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

28 Aug 1981, 209p. : En

5210000

AID-521-C-122-T

In Haiti, the population's failure to achieve nutritional well-being is due more to food shortages related to the deteriorating economic situation than to inadequacies in Haitians' knowledge of nutrition. So concludes this detailed study of the food-related beliefs and behavior of a community of peasant cultivators in Haiti's Cul-de-Sac Plain.

Part One of the study presents information on food-related beliefs and practices in regard to maternal feeding and child growth during pregnancy, postpartum care and feeding of mothers and infants, supplements to breastfeeding, and weaning. Part Two describes the village food supply system, including the role of the kitchen, the use of fuel and water, food sources and distribution patterns, food purchasing and trading



practices, and the hunger-related effects of deteriorating food supplies. Part Three covers the daily preparation and distribution of food in village kitchens and the process of socializing children to cope with food scarcity.

141 **PN-AAL-411**
MF \$2.16/PC \$13.13

Description of the first South Pacific regional mother and infant nutrition seminar; consultant report for the South Pacific

Jelliffe, Derrick B.; Jelliffe, E.F. Patrice
U.S. Agency for International Development. Bureau for Development Support. Office of Nutrition; Education Development Center, Inc.; International Nutrition Communication Service

15 May 1981, (21p.) + 7 appendices : En
9311010
AID/DSAN-C-0209

To promote breastfeeding and improved infant nutrition in the South Pacific and to establish regional cooperation in nutritional surveillance and data gathering, a regional seminar was convened. This report summarizes that seminar.

Discussions centered on the need to collect data on breastfeeding, bottle feeding, the introduction of semi-solid foods, and the availability and use of radio, and to gather information on cultural blocks to the use of low-cost nutritious weaning foods and the major causes of the successes or failures of breastfeeding. Also discussed were existing and experimental procedures for making anthropomorphic measures. The delegates produced country action programs for improved maternal and child nutrition and formulated actions to promote regional coordination. It was resolved that the nine countries of the region should promote and protect breastfeeding and adopt the WHO International Code of Marketing of Breast Milk Substitutes.

Attached are: country papers for Tuvalu, Kiribati, Papua-New Guinea, and the Cook Islands; tentative country action programs for Fiji, Tuvalu, the Cook Islands, Tonga, the Solomon Islands, and Papua-New Guinea; a description of a home economics course and an article on declining breastfeeding in Suva, Fiji; and a report on the satellite communications system in the South Pacific.

142 **PN-AAL-628**
MF \$2.16/PC \$17.81

Estado nutricional de la poblacion boliviana (Nutritional study of the Bolivian population)

Vera, Ruth; Moore, Melinda; et al.
Bolivia. Ministry of Planning and Coordination. National Institute of Health and Nutrition; U.S. Agency for International Development. Bureau for Latin America and the Caribbean. Bolivia

1981, 99p. + 7 appendices : Bibliography, p.98-99, Es
5110468

To help provide accurate health statistics needed for national health and nutrition planning and policy in Bolivia, this study provides basic data on the nutritional status of children under age 5 throughout the country.

Against a background of environmental and demographic considerations are presented the survey methodology, the

types of data collected, and the evaluation indices used. Indices of height, age, weight, stature, breastfeeding, morbidity, mortality, and vitamin A deficiency are analyzed for interrelationships and for demographic correlates.

To resolve the massive malnutrition problems examined in this study, recommendations are made regarding the double thrust of Bolivia's agricultural sector toward production of both basic foods and commercial crops, the role of food processing industries, and the needs for specifically targeted programs in nutrition education and primary health care. The need for research on the seasonal prevalence of malnutrition is noted. Supporting data include 19 tables, 10 graphs, and supplementary appendices.

143 **PN-AAL-764**
MF \$1.08/PC \$7.93

Using microcomputers to improve the management of food security systems

Gotsch Associates, Inc.
15 Nov 1982, 56p. : Bibliography, p.56, En
9365316
AID/DSAN-C-0251

Despite progress in broadening the perspective on food policy, relatively little discussion has been devoted to the actual management of food security systems. This study examines food management from three perspectives.

An initial discussion of pertinent substantive issues reveals the need for quantitative techniques in reducing the uncertainty facing food managers in regard to the size and location of food inventories, mobilizing human and logistical resources in time of crisis, etc. The second section focuses on new microcomputer technology in its capacity as a management tool. Results suggest that the accessibility and manipulable character of microcomputers provide a ready means for monitoring data on commodity flows. The third section centers on the process by which this relatively sophisticated technology can be transferred to the managers of the system. Lastly, some future research needs are identified and two areas of future development - graphic methods and linkages between computers and other data collection systems - are discussed. Appendices include four demonstration models on Visicalc and models for India, Bangladesh, and Kenya.

144 **PN-AAL-797**
MF \$1.08/PC \$11.70

Tanzania: a guide to the literature

Israel, Ron; Nestor, Joanne; et al.
U.S. Agency for International Development. Bureau for Development Support. Office of Nutrition; Education Development Center, Inc.

Maternal and infant nutrition reviews, 1982, ix, 83p. : Bibliography, p.63-83, En
9311010
AID/DSAN-C-0209

A guide to available literature on maternal and infant nutritional status, beliefs, and practices in Tanzania is presented in this report. The literature is classified as follows: nutrition and health status; dietary beliefs about pregnancy, lactation, breast milk substitutes, weaning, illness, and cure; dietary practices, covering food sources, dietary patterns in various areas, and



rural and urban practices; the correlation of nutritional status with child malnutrition; and health and nutrition policies, including current government, USAID/T, international agency, and private voluntary organization nutrition-related programs and policies. A brief overview of the information available under each category and subcategory is provided.

Tanzania's main nutritional deficiency is protein energy malnutrition (PEM), affecting over one-third of the population, followed by anemia. The national infant mortality rate is estimated at 152 per 1,000 live births, and over 25% of children born die before the age of five. Commentaries on nutrition-related issues and a 65-item annotated bibliography (1940-81) are appended.



Hunger offers the single, most powerful point of intervention in the developing world.

145

PN-AAL-798

MF \$2.16/PC \$14.69

Ghana: a guide to the literature

Israel, Ron; Nestor, Joanne; et al.

U.S. Agency for International Development. Bureau for Development Support. Office of Nutrition; Education Development Center, Inc.

Maternal and infant nutrition reviews, Mar 1982, ix, 107p. : Bibliography, p.87-107, En

9311010

AID/DSAN-C-0209

In Ghana, one-third of children under age two who attend clinics are malnourished at the time of their first visit. Based on a literature review, this report summarizes what is known about maternal and infant nutritional status, beliefs, and practices in Ghana, its major regions, and its urban and rural areas.

The report first considers the nutritional and health status of the general population, of pregnant and lactating women, and of infants aged 0-6 and 6-24 months. Reviewed next are dietary beliefs concerning food in general, pregnancy, lactation, breast milk substitutes, weaning, and illness and cures. General dietary practices and specific practices related to pregnant and lactating women and to infants are then identified; health and medicine practices are identified. The correlations found among a wide variety of nutrition, health, and socioeconomic variables are described. Next, government, A.I.D., other donor, and PVO nutrition and health policies and programs in Ghana are listed. A final section summarizes comments found in the literature on nutrition education, food production and distribution, breastfeeding, and other topics. Included is a 66-item (1956-81) annotated bibliography.



146

PN-AAJ-619

MF \$1.08/PC \$6.50

Toward a health project evaluation framework

Dunlop, David W.

U.S. Agency for International Development. Bureau for Program and Policy Coordination. Office of Evaluation *AID evaluation special study, no.8*, Jun 1982, ix, 35p. + appendices : En

Despite the increasing importance of health programs, there is little hard evidence that they lead to improved health status. To determine if primary health care is in fact working, this report presents a conceptual framework for evaluating such projects.

First, the authors describe the problems related to current health project/program evaluations, including the assumed linear flow of impacts, attribution, feedback and indirect impacts, and time as an important variable in evaluation. Emphasizing the subtlety and long-term nature of the evaluation process, the authors then develop five concepts: (1) the use of the economic concepts of investment and consumption rather than such measures as morbidity and mortality to gauge final project impact; (2) the importance of context and constraint analysis; (3) the growing claim of recurrent health program costs on national budgets; (4) equity considerations; and (5) the essential importance of a dynamic evaluation system which incorporates the above ideas. Finally, the authors discuss a series of practical issues which must be addressed before any evaluation strategy can be defined, namely, attribution of impact, timing of impact measurement, audience differences, data availability, and information costs. Attached are a 57-item bibliography, a list of generic questions for an economic evaluation of primary health care projects, and a proposed set of measures/indicators for health project evaluation.

147

PN-AAJ-621

MF \$2.16/PC \$18.07

Korea health demonstration project; project impact evaluation

Dunlop, David W.; Oldwine, B. Eilene; et al.

U.S. Agency for International Development. Bureau for Program and Policy Coordination. Office of Evaluation *A.I.D. project impact evaluation report, no.36*, Jul 1982, xix, 38p. + 10 appendices : En
4890710

It is being increasingly recognized that Western-oriented medical systems cannot meet the health care needs of developing countries. This report evaluates a project to create a capability within the Government of Korea (GOK) to plan, conduct, and evaluate low-cost, multi-county, integrated health delivery projects.

After outlining the project's setting, design, and implementation, the report focuses on the project's institution building and health care delivery impacts. Initial progress was considerable. The Korean Health Development Institute (KHDI) was created to implement health delivery systems in three counties, and a National Health Council was formed to coordinate participating public and private agencies. The KHDI's approach was to introduce a new cadre of multipurpose para-professionals and to improve the professional capabilities of an existing single-purpose cadre. The two cadres then worked through teams of village volunteers to increase community involvement in health care delivery.

By 1978, considerable progress had been made in improving access to health care in the three project areas; the average cost per visit at the most peripheral health unit was \$1.90. Concurrently, physicians' share of the market fell 40-50%. At the urging of physicians, health paraprofessionals were disallowed from providing services outside their legal scope of practice. Other significant events also occurred during 1978-80. The number of medical school graduates doubled and more graduates were assigned to rural areas, a comprehensive GOK health insurance program was launched, and per capita income in the three counties grew. As a result, health service utilization fell markedly and the cost per curative visit rose to \$3.00.

The authors notes several lessons, including: the riskiness of developing an extra-governmental agency such as the KHDI; the need to anticipate economic impacts of changes in health care policy; the need to perform incentives and contextual analysis of all potential project actors; and the difficulty in determining a project's impact on overall health status. A postscript addresses the long-term financial impact of the GOK's health insurance program. Extensive tables, charts, and graphs are contained in the text and in appendices; the latter also includes a 33-item bibliography (1975-81), a report on the current status of health care delivery in Korea, project-related public documents, and other information.

148

PN-AAK-994

MF \$2.16/PC \$19.24

Comprehensive vector control - current status and research needs; workshop sponsored by USAID/USDA

U.S. Agency for International Development. Bureau for Science and Technology. Office of Health; U.S. Department of Agriculture. Agricultural Research Service. Insects Affecting Man and Animals Research Laboratory (Workshop on Vector Control, Gainesville, FL, US, 13-16 Apr 1982)
13-16 Apr 1982, v.p. : En

Insect-transmitted diseases remain a major health problem worldwide. In recent years, insecticide resistance, economic considerations, and environmental concerns have renewed interest in vector control (VC) methods. This paper reports the proceedings of a workshop held to review the status of vector biology and control and to provide A.I.D. with recommendations for VC research.

Findings of working groups are presented in regard to insecticides, including residual sprays, larvicides, insect growth regulators, and space sprays; vector source reduction and water and weed management; the use of surveillance, attractants, and repellents; environmental problems; techniques of genetic control and insect sterilization; biological control; and vector population dynamics and computer simulations. Specific recommendations for research priorities are made for each topic. Conclusions identify the need for: a storage and retrieval system for VC data; development of VC training activities; a cooperative research program; and improved monitoring methods for VC program planning and evaluation. Attached are the workshop agenda, lists of participants and working groups, and the 20 working papers presented at the conference.



HEALTH

149

PN-AAL-174
MF \$1.08/PC \$10.92

U.S. health professionals in international health: needs and opportunities

Baker, Timothy D.; Weisman, Carol; Piwoz, Ellen
Johns Hopkins University. Department of International Health; National Council for International Health
Jul 1982, 48p. + appendices : En
9361406
DPE-1406-C-00-1013-00

While U.S. health professionals have played important roles in international health for over 70 years, documentation on this participation is fragmentary and outdated. This study estimates the present and future supply and demand for U.S. health professionals in international health and analyzes the implications for institutional recruitment and training and for individual job opportunities.

The study has four components: (1) a survey of potential employers of U.S. international health professionals; (2) a survey of key informants knowledgeable about the international market for health professionals; (3) a review of the career patterns of U.S. health professionals; and (4) a survey of the training capacities of U.S. schools of public health. Data were gathered from 381 organizations concerning their estimated 8,700 U.S. international health professionals.

The data show that there is an unmet need for short orientation courses in international health and for training replacements for the existing force of health professionals in long-term, non-clinical posts. While the need for long-term clinicians and professional directly involved in providing health services may wane, the need to transfer skills in health management, training, and administration is likely to grow. Survey questionnaires and detailed data are included in appendices.

150

PN-AAL-324
MF \$1.08/PC \$8.97

Providing basic medicines in rural primary health care projects in Africa: technical guidelines

King, Rosalyn C.
Drew (Charles R.) Medical Center. Office of International Health and Domestic Development; U.S. Agency for International Development. Bureau for Africa. Office of Development Resources. Health/Nutrition Division
3 Nov 1981, 25p. + 6 appendices : En
6980135
AFR-0135-C-00-1092-00

Inadequate attention to appropriate selection, distribution, and use of basic medicines in A.I.D. primary health care (PHC) activities in developing countries has often hindered implementation of PHC projects. This report provides general guidelines for project staff on the implementation and evaluation of these projects which include pharmaceutical supply components, and provides a perspective on the conceptual framework of the drug supply sector. Successful general strategies and techniques are presented, focusing on provision of basic medicines, (exclusive of contraceptives and vaccines) and a geographic orientation toward Africa.

Pharmaceuticals involved in PHC projects are reviewed as therapeutic and administrative tools and as agents of economic

and political change. Guidelines for provision of drugs cover facilities, personnel, financing, and drug sources, as well as systems for drug selection, procurement, storage, inventory, distribution, prescription, and use. An appropriate drug utilization and information system is outlined, and suggestions are made for addressing drug supply in the design, implementation, and evaluation of A.I.D. projects. Among the appendices are a paper on pharmacies in Cameroon and a list of ineffective and possibly effective drugs.

151

PN-AAL-335
MF \$1.08/PC \$10.27

Strategy for control of schistosomiasis in the Dominican Republic

U.S. Agency for International Development. Bureau for Latin America and the Caribbean. Regional Development Office
n.d., 76p. : En
5170000
LAC-0000-C-00-0133-00

Although the true prevalence of schistosomiasis in the Dominican Republic is unknown, the disease is considered endemic in four eastern provinces. This report reviews data on the prevalence and distribution of schistosomiasis in the Dominican Republic, describes government efforts to control, diagnose, and treat the disease, and proposes a modest, cost-effective disease control strategy.

Accurate determination of the endemic area is the most immediate need. The recommended control program assumes a preliminary, population-based epidemiological survey, for which methods are proposed. Next, suggestions are made for improving laboratory diagnosis of schistosomiasis and using oxamniquine for treatment. Suggested measures for controlling the snail *Biomphalaria glabrata* - an intermediate host of schistosomiasis - include use of molluscicides and environmental control through habitat alteration. In addition, a small, 3-year research project to determine the possible biological control of *Biomphalaria glabrata* by another species of snail, *Thiara granifera*, is recommended. The proposed strategy includes provisions for training in epidemiological assessment, laboratory diagnosis, and snail control.

152

PN-AAL-410
MF \$1.08/PC \$11.05

Preparing for a needs assessment: a report on IEC activities to support the health and family welfare program of the Government of India

Sweeney, William O.
U.S. Agency for International Development. Bureau for Science and Technology. Office of Health; American Public Health Association
17 Sep 1982, iii, 33p. + 5 appendices : References, p.32-33, En
9365900
AID/DSPE-C-0053

In preparation for A.I.D.'s Integrated Rural Health and Population Project in India, this report identifies issues for a communication needs assessment which will precede detailed communication improvements to be planned by states and districts under the project.



The report's focus is on rural services for couples and communities through primary health centers (PHC's), with emphasis on information, education, and communication (IEC) needs. The educational responsibilities of block health and family welfare workers, IEC training for health staff, IEC professionals' job responsibilities, and IEC management are reviewed. Problems and opportunities are outlined, with points or issues proposed for the assessment. The need for small, qualitative studies on village beliefs, attitudes, and practices is briefly discussed and the kinds of expertise needed to conduct the assessment are suggested. Attached is a 24-item list of references (1979-1980).

After briefly describing each of the projects, the authors discuss, on the basis of their evaluations, the following subjects: community participation; health workers; project support; program costs; program evaluation and general program progress; and A.I.D. project design and administration. In evaluating the projects, attention was given to the PHC approach being used, the project's scale and location, and the stage of project implementation. In general, the authors conclude that many of the projects have successfully established PHC structures, increased accessibility and use of health services, and sensitized governments to PHC needs; however, data are few and too preliminary to judge the impact of these projects on directly improving health status. References are cited for each project.

153

PN-AAL-726

MF \$1.08/PC \$2.34

Analysis of the pharmaceutical logistics system in Honduras

Leroy, Aida A.

U.S. Agency for International Development. Bureau for Science and Technology. Office of Health; American Public Health Association

7 Sep 1982, i, 12p. + appendix : En

9365900

AID/DSPE-C-0053

Even though a large proportion of the health care budget in Honduras is allocated for pharmaceuticals, the majority of the population lack access to essential drugs. Based on a review of the Honduran Ministry of Health's pharmaceutical logistics systems, the authors of this report conclude health funds are often spent on drugs that are ineffective, of poor quality, or ill-suited to the people's needs. Estimates of drug needs and procurement are arbitrary, warehousing and distribution are inadequate, and health personnel are basically untrained to handle and use drugs.

Two plans which could be easily implemented to help resolve some of the more critical pharmaceutical logistics problems in Honduras are suggested. The first would develop drug requirements for health care facilities and would disseminate dispensing guidelines to health care personnel. The second plan would make standardized drug order, inventory control, and prescription forms available. Ten further recommendations are also made.

155

PN-AAK-969

MF \$1.08/PC \$3.99

Protein deficiency and treatment of xerophthalmia

Sommer, Alfred; Muhilal, H.; Tarwotjo, Ignatius

Archives of ophthalmology, v.100, May 1982, p.785-787 : En

9310045

AID/DSAN-CA-0267

In a controlled clinical trial of massive dose vitamin A therapy for xerophthalmia, holo-retinol-binding protein (holo-RBP) response was related to baseline protein status. Corneal healing was more commonly delayed or transient in children with protein-energy malnutrition (PEM), despite the vast majority achieving holo-RBP levels incompatible with severe corneal destruction. Correction of PEM is essential to ensuring a sustained clinical cure, and repeated massive vitamin A therapy is advisable until it occurs. (Author abstract)

156

PN-AAL-113

MF \$1.08/PC \$6.65

Nutritional factors in corneal xerophthalmia and keratomalacia

Sommer, Alfred; Muhilal, H.

Archives of ophthalmology, v.100, Mar 1982, p.399-403 : En

9310045

AID/DSAN-CA-0267

Nutritionally related corneal disease accounts for 250,000 new cases of blindness per year. Although vitamin A deficiency is clearly the basis for punctate keratopathy and corneal xerosis, the relative importance of vitamin A and protein deficiencies in the etiology of severe ulceration and keratomalacia is less certain. To help clarify this relationship, this report describes a study of the nutritional status of 162 patients in Cicendo, Indonesia with cases of keratopathy, ranging from mild xerosis through full-thickness necrosis (keratomalacia).

The patients underwent detailed ophthalmic, pediatric, and bacteriologic examinations. Six nutritional measures were used: prevalence of pedal edema; weight for height; serum levels of albumin, transferrin, vitamin A; and holoretinol binding protein (HRBP). Laboratory and statistical tests are described and variabilities explained.

The study found that even the most severe corneal alterations were compatible with normal indices of protein and anthropometric status, but not with normal serum vitamin A levels. Analysis suggests that interaction between vitamin A

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PN-AAL-765

MF \$2.16/PC \$13.26

Primary health care: progress and problems, an analysis of 52 AID-assisted projects

Parlato, Margaret Burns; Favin, Michael N.

American Public Health Association. International Health Programs

Aug 1982, 101p. : En

9365900

AID/DSPE-C-0053

While primary health care (PHC) strategies have been used with considerable success in small-scale projects, implementation strategies at the regional and national levels are still being tested. This report reviews 52 AID-funded PHC projects worldwide, identifying major cross-cutting issues and recommending adjustments in program direction.



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and protein status determines cellular adequacy of vitamin A metabolism, which virtually collapses in keratomalacia. Serum levels of HRBP were severely and uniformly depressed in all degrees of corneal involvement. It is concluded that although protein status seems to influence vitamin A metabolism in target cells, vitamin A availability appears to play the dominant role, since massive vitamin A therapy resulted in transient healing of viable corneal tissue. A 38-item list of references (1729-1982) is appended.

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PN-AAL-238

MF \$4.32/PC \$38.35

Nutritional blindness: xerophthalmia and keratomalacia

Sommer, Alfred

Keller (Helen) International, Inc.; U.S. Agency for International Development. Bureau for Science and Technology. Office of Nutrition

1982, iii, 282p. : En

9310045

AID/TA-C-1321

One of the oldest known human afflictions, nutritional blindness, remains a major clinical and public health problem. An easily preventable disease, it affects most acutely the depressed populations in developing countries. More than half a million children and countless adults are stricken each year.

The first comprehensive, thoroughly documented book on human xerophthalmia, this text provides a complete description of the pathologic, clinical, and epidemiologic dimensions. Based on an extensive research project in Indonesia, it also gives a full review of other studies and programs for prevention.

Major topics considered include the clinical manifestations of the disease and their evolution and diagnosis; the importance of vitamin A-protein interaction in determining the severity of the disease; factors responsible for corneal destruction; the value of oral vitamin A therapy; and steps and procedures for selecting intervention strategies.

Sixty-seven illustrations - including thirty-two color plates - enhance the text. A valuable reference for ophthalmologists, nutritionists, pediatricians, and public health professionals, the book will have special relevance for those working in developing countries. (Author abstract)

158

PN-AAL-695

MF \$2.16/PC \$14.04

Prevalencia de bocio endemico en la poblacion escolar de Bolivia (Prevalence of endemic goiter in the school population of Bolivia)

Vera, Ruth; Varela, Guillermo; et al.

U.S. Agency for International Development. Bureau for Latin America and the Caribbean. Bolivia; Bolivia. Ministry of Planning and Coordination. National Institute of Health and Nutrition

1981, 104p. : Bibliography, p.104, Es

5110468

Although goiter has been endemic in Bolivia since the days of colonization, the actual magnitude and severity of the disease has never been measured. This 1981 study by the

Instituto Nacional de Alimentacion y Nutricion was conducted to statistically measure the prevalence of goiter among school children in Bolivia.

After an outline of the study's objectives and methodology, measures of the prevalence of goiter at the national level, by geographic area, and by political department are presented and the results discussed. Goiter was found to be highly prevalent among school children (60%) in all regions, especially among girls up to the age of 12 (65.8%), with marked prevalence in rural areas where iodine consumption is most limited. Variation among departments was considerable, being highest in Chuquisaca. It is considered imperative that this preventable disease be controlled due to the severe physical and mental debilities it inflicts, ultimately impeding human productivity and national development. Final chapters and appendices present extensive statistical analyses of data in tables and graphs, along with recommended policies and interventions.

159

PN-AAL-788

MF \$1.08/PC \$1.56

Caesarean delivery in selected Latin American hospitals

Janowitz, Barbara; Covington, Deborah L.; et al.

International Fertility Research Program; U.S. Agency for International Development. Bureau for Science and Technology. Office of Population; Society of Community Medicine

Public health, London, 96, 1982, p.191-201 : References, p.201, En

932000537

AID/pha-C-1172

Rates of caesarean birth vary widely in a selection of 20 Latin American hospitals, ranging from a low of under 3% to a high of almost 50%. Data from four of the hospitals with caesarean rates that span the wide range are analyzed. Despite their disparate levels, these hospitals show the same pattern with respect to age and parity: higher rates for nulliparous and for older women. The proportion with reported indications for caesarean delivery increases with the incidence of the surgery. However, a higher proportion of emergency caesareans is evident in hospitals with lower incidence. Variations in indications by institution may therefore be of limited use in explaining variations in the caesarean rate. Costs could be cut by reducing the rate, but only in hospitals where it is high; in hospitals with low rates, no cost savings may be realized and the health of the mother and child endangered. (Author abstract)

160

PN-AAL-789

MF \$1.08/PC \$1.04

Development of an index of high-risk pregnancy

Fortney, Judith A.; Whitehorne, Edward W.

International Fertility Research Program; U.S. Agency for International Development. Bureau for Science and Technology. Office of Population

American journal of obstetrics and gynecology, v.143(5), 1 Jul 1982, p.501-508 : En

932000537

AID/pha-C-1172



Presented is a scheme by which an index of high-risk pregnancy can be evaluated. The proposed scheme is applied to a risk index which was developed for purposes of illustration. The usefulness of risk indices (or any other predictive measure) can be judged in clear statistical terms. The illustrative model developed here is tested on two sets of data and is found to behave similarly with each, except to the extent that it is influenced by the incidence in the test population of the outcome to be predicted. The authors conclude that unreasonable demands are made of high-risk indices; no index can satisfy all requirements. However, if the requirements are reasonably stated in advance, indices of high-risk pregnancy can be extremely useful screening mechanisms. (Author abstract)

161

PN-AAL-404

MF \$1.08/PC \$8.06

Night soil disposal and effluent reuse in Maseru, Lesotho

Okun, Daniel A.; Briscoe, John
Camp Dresser and McKee, Inc.; U.S. Agency for International Development. Bureau for Science and Technology. Office of Health

WASH field report, no.55, Sep 1982, v, 34p. + 5 appendices
: References, p.34, En
9311176
AID/DSPE-C-0080

A consultant team was fielded to Maseru, Lesotho to analyze night soil disposal and effluent reuse through crop irrigation. This consultant report reviews waste disposal practices and alternatives in Maseru, analyzes potential night soil disposal options, and examines the capability of the new Ratjamose sewage treatment plant to produce irrigation-quality wastewater effluent.

The team found that a serious public health hazard existed, as 15% of Maseru residents were using erosion ditches which drain into the city water source as latrines; another 30% were depositing night soil from bucket latrines into open trenches near emergency reservoirs. It is recommended that the trenches be covered and that a night soil disposal facility be constructed at the Ratjamose plant.

Regarding effluent reuse, it was determined that a pilot wastewater reuse system is feasible. Various operational recommendations are made to improve the quality of the effluent produced.

162

PN-AAL-409

MF \$1.08/PC \$10.66

Rainwater harvesting for domestic water supplies in developing countries

Keller, Kent
U.S. Agency for International Development. Bureau for Science and Technology. Office of Health; Camp Dresser and McKee, Inc.

WASH working paper, no.20, Sep 1982, iv, 45p. + 3
appendices : Bibliography, p.38-45; References, p.70-76,
En
9311176
AID/DSPE-C-0080

Interest in rainwater harvesting (RWH) for water supply in developing countries has grown with the increasing interest in supporting locally organized and implemented efforts to meet basic human needs. RWH is an attractive way of increasing the quantity of water available for household use in areas with water shortages. Catchments using existing roof structures and surfaces combined with self-built storage containers represent a particularly promising approach.

In this illustrated report the literature on rainwater harvesting is reviewed and publications most useful to prospective designers and implementers of RWH projects are identified. Guidelines for assessing the feasibility and costs of simple RWH systems are also provided. Construction of selected catchment and storage technologies is described. When a small existing roof is used for catchment, several gallons per day could be provided for at least part of the dry season in central Africa at a cost (for self-help construction of the storage tank) of under \$100. Costs of tanks may be reduced by applying or modifying traditional storage techniques or by planning storage in construction of new buildings. (Author abstract)

163

PN-AAL-412

MF \$2.16/PC \$14.30

Workshop for the design of low cost water systems in Ecuador

Lauria, Donald T.
U.S. Agency for International Development. Bureau for Science and Technology. Office of Health; Camp Dresser and McKee, Inc.

WASH field report, no.63, Nov 1982, ii, 11p. + 10
appendices : En
9311176
AID/DSPE-C-0080

The college of Civil Engineers of Guayaquil, Ecuador hired a U.S. expert to conduct a workshop, herein summarized, introducing computerized statistical and mathematical techniques to improve planning of community water systems. During the workshop, lectures were given on statistical analysis, economies of scale, optimal design periods, branched and looped networks, pumping stations, and reservoirs. The course was well organized, although there were too many participants (120 engineers attended) for thorough hands-on experience with the computer. Although the maps and basic data supplied for the case studies were excellent, some of the cost data for water systems components were only fair, interfering with determination of optimal design periods.

Technical assistance from practicing engineers is recommended and guidelines for a follow-up course are provided. Appendices (constituting the bulk of the document) include reports on: models for capacity planning in water systems; using SPSS; a linear programming model for designing branched water systems; closed-circuit water distribution systems; wet-well volume for fixed-speed pumps; and the linear decisions rule in reservoir management and design.



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PN-AAL-442

MF \$1.08/PC \$11.96

Knowledge, attitudes, and practices survey of water and sanitation in Swaziland

Green, Edward

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

Swaziland; Academy for Educational Development, Inc.;

Swaziland. Ministry of Health

1 Oct 1982, iii, 80p. + appendix : References, p.79-80, En 6450087

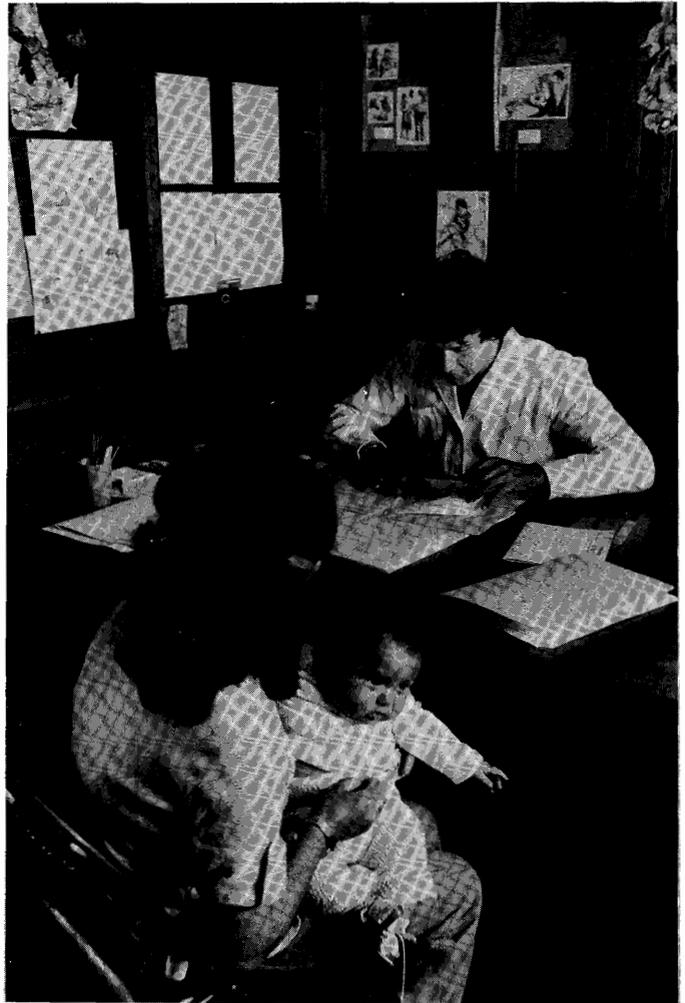
AFR-0087-C-00-1005-00

A knowledge, attitudes, and practices survey relating to water and sanitation was conducted in rural Swaziland to provide baseline data for the design of a national health education strategy aimed at reducing the incidence of water-borne diseases. Special attention was given to behavioral and

sociocultural factors. This report describes the survey methodology and respondents' characteristics; presents the findings in the areas of water, sanitation and hygiene, infant feeding, and water-and sanitation-related diseases; and suggests health education strategies.

Variations in respondents' health-related knowledge and practices were due mostly to educational differences; scores were slightly higher in areas visited by rural health motivators. The major problems found were: lack of concern about safe drinking water; lack of sanitary latrines; infrequent hand-washing and bathing; exposure of food and water to contamination; and a trend towards bottle feeding rather than breastfeeding.

The authors suggest that, due to lack of community organization in rural Swaziland, health education efforts based on participatory planning or self-help would be ineffective. However, educational approaches through radio, schools, or nurses, extension workers, and traditional healers are more promising. Health education messages could be designed to accommodate certain traditional health beliefs without sacrificing public health objectives. Finally, suggestions are made for changing specific health-related behaviors.



U.S. professionals have played important roles in international health for over 70 years.



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PN-AAL-102

MF \$1.08/PC \$8.45

Analyzing the determinants of fertility: a suggested approach for data collection

Bilsborrow, Richard; Adlakha, Arjun; et al
U.S. Agency for International Development; University of North Carolina, Chapel Hill. International Program of Laboratories for Population Statistics

Laboratories for population statistics: manual series, no.9,
May 1982, v, 62p. : En
9320623
AID/DSPE-C-0025

For a better understanding of fertility determinants, data should be collected on a wider set of variables in household fertility surveys, especially where husband and wife make joint decisions on childbearing. A set of five survey questionnaires are herein presented to stimulate in-depth analysis of fertility determinants in developing countries.

The household questionnaire covers housing materials and household occupants, facilities, and assets. The husband's questionnaire covers his background, number of marriages and children, family planning, occupation, and other household income. In addition to these, the wife's questionnaire includes fertility, birth interval data, and children's activities. The household enterprise questionnaire includes income from agriculture and forestry (farm land and capital, crop production, animal raising, along with farm expenses), and from non-farm business income and future prospects. The community questionnaire covers general characteristics, transportation, facilities, modernization, employment, agriculture and family planning.

166

PN-AAL-116

MF \$1.08/PC \$3.51

1980 baseline round of the East Java (Indonesia) population survey: a summary of results

University of North Carolina, Chapel Hill. International Program of Laboratories for Population Statistics
Laboratories for population statistics: summary series, no.5,
Dec 1981, : En
AID/CSD-2495

This report describes the 1980 baseline round of the East Java Population Survey (EJPS) and presents major findings regarding age, sex, marriage, fertility, contraception, and mortality.

Survey findings show that East Java has a relatively young population - 37% are under age 15 and less than 4% are over 65 years of age. Males slightly outnumber females. Marriage is virtually universal; the mean age at first marriage for a female is 19.9 years - an increase from 17.9 in 1961. Data show a persistent decline in East Java's fertility. Reference period data show a total fertility rate of 3.22 children per woman. For all of East Java, 42% of women reported that they were current users of contraception, an increase from 12% in 1973 and from 32% in 1976. Data on infant and adult mortality and on crude birth rate are unclear, but should be clarified by later rounds of the EJPS. A 14-item list of references is appended.

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PN-AAL-165

MF \$1.08/PC \$1.69

Infant mortality rate in three parishes of Western Jamaica, 1980

Desai, P.; Hanna, B.F.; et al.
University of the West Indies, Mona. Department of Social and Preventive Medicine; U.S. Agency for International Development. Bureau for Latin America and the Caribbean. Jamaica; Jamaica. Ministry of Health
1982, i, 11p. : En
4320040
532-79-12

The infant mortality rate is a sensitive index of health. However, in recent years, perhaps due to under-registration of deaths, the infant mortality rates of Jamaica, particularly of certain parishes, have been so low as to make their reliability questionable.

This study sought to establish the infant mortality rates for the parishes of St. James, Hanover, and Trelawny during 1980. Information on infant deaths in 1980 was sought from a variety of sources, as was information on live births in the same year.

Fewer than half of all infant deaths appeared to have been registered in 1980 in the parishes studied. The infant mortality rate for 1980 was 27 per thousand live births for the three parishes combined. The apparent under-registration of infant deaths is discussed. (Author abstract)

168

PN-AAL-309

MF \$1.08/PC \$7.67

Analysis of extant survey and census data: problems and solutions

Phillips, James F.
American Public Health Association; U.S. Agency for International Development. Bureau for Development Support. Office of Population
9 Aug 1982, v, 26p. + 3 appendices : En
9365900
AID/DSPE-C-0053

An assessment, herein presented, was made of extant Jordanian survey and census data to explain why fertility is so high when use of contraception is also high.

According to the authors, this apparent paradox exists because contraception is but one of 11 variables which determine total fertility. Mediating toward high fertility in Jordan are a high proportion of people married, infrequent marital dissolution, high fecundability, short lactational amenorrhea, low intrauterine mortality, and high reproductive efficiency.

However, even when these other factors are taken into account, fertility in Jordan is still approximately 10% higher than expected. This discrepancy is likely due to overreporting of recent period of fertility and of current contraceptive usage. The authors recommend that the next fertility survey be a refined version of the 1976 Jordan Fertility Survey rather than the contraceptive prevalence survey favored by A.I.D.

Attached are a technical assistance report to USAID/J on data analysis problems at selected Jordanian research centers, and a report on technical assistance provided to the University of Jordan's Community Medicine Department.



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PN-AAL-330

MF \$1.08/PC \$12.48

Malaysian family life survey: codebook for the individual-level dataset

Fain, Terry

U.S. Agency for International Development. Bureau for Program and Policy Coordination. Office of Policy Development and Program Review; Rand Corp.

Rand note, N-1815-AID, Feb 1982, 89p. : En

9300088

AID/OTR-G-1822; AID/OTR-C-1432

The Malaysian Family Life Survey (MFLS) consists of three rounds of data gathered in peninsular Malaysia in 1976 and 1977 from a sample of 1,262 private households, each containing a once-married woman under 50 years old. Questionnaires were designed to assess key economic and biomedical relationships affecting family size, birth spacing, and breastfeeding patterns in order to identify factors which could be included in public policy to influence fertility. This report describes the MFLS, the survey instruments, and the history and development of the individual-level dataset, and provides useful information for dataset users.

In the survey, a total of 11 questionnaires were administered to women and/or men to gather data about demographic variables, primary demographic and biological conditioning factors, major determinants of a woman's time with her children, major components of the family's economic resources, and community factors. To facilitate analysis of MFLS data, individual-level datasets were created, consisting of one fixed-length record per individual and focusing on current demographic, time allocation, and income and wealth information at both the individual and household levels. The individual-level codebooks for the three survey rounds are attached.

170

PN-AAL-331

MF \$1.08/PC \$5.72

Techniques for analysis of migration-history data

DaVanzo, Julie

U.S. Agency for International Development. Bureau for Program and Policy Coordination. Office of Policy Development and Program Review; U.S. Department of Health and Human Services. National Institutes of Health National Institute of Child Health and Human Development; Rand Corp.

Rand note, N-1824-AID/NICHD, May 1982, 35p. :

References, p.33-35, En

Supported by grant no. P50-HD12639 from the National Institutes of Health

9300088

AID/OTR-G-1822

Migration-history data allow examination of the interrelation between migration and socioeconomic change and thus have important policy implications. This report discusses alternative techniques for analyzing such data as gleaned from national migration surveys in Asia and the Pacific.

Methods of processing and analyzing migration-history data for four types of studies are discussed: patterns of migration and their changes over time; determinants of migration; choices among alternative types of moves (e.g., rural-urban vs. rural-rural and North-to-South vs. North-to-East); and consequences of migration for the individual.

For each topic, discussion is given to the general types of data desired or required, retrieval of this data from life history, and appropriate analytical techniques. Covered in the discussion are simple, older techniques (e.g., cross-tabulations), as well as newer more sophisticated ones (e.g., regression-switching models). A concluding section discusses implications of these techniques for data processing. A list of references (38 items, 1973-80) is appended.

171

PN-AAL-618

MF \$1.08/PC \$3.51

Infant mortality in Kenya: evidence from the Kenya fertility survey

Mott, Frank L.

World Fertility Survey; International Statistical Institute; U.N.

Fund for Population Activities; U.S. Agency for International Development. Bureau for Science and Technology. Office of Population; U.K. Overseas Development Administration

Scientific reports, no.32, Aug 1982, 25p. + appendix :

References, p.25, En

Recent increases in Kenya's population growth rate - one of the world's highest - are due more to declining infant mortality than to rising fertility. This paper examines infant mortality in Kenya based on the 1978 Kenya Fertility Survey and argues that despite declining mortality, much still needs to be done in the areas of health and nutrition.

After briefly reviewing African data on child and infant mortality and historical data on infant mortality in Kenya, the author analyzes long-term and current trends in Kenya's infant mortality. Next, past and present differentials in infant and neonatal mortality are examined in relation to birth order, child's sex, education, location (urban, rural, and by region), and type of marriage (monogamy versus polygamy). Finally, the author performs a multivariate analysis of the above trends and differentials.

The author concludes that further declines in infant mortality in Kenya will be more difficult to attain and will depend on gradual improvements in the socioeconomic status of the average citizen. The text includes 24 tables. A 27-item bibliography (1949-79) and a discussion of the use of the Brass technique are appended.

172

PN-AAL-715

MF \$2.16/PC \$20.93

Estimation of recent trends in fertility and mortality in Egypt

Askar, Gamal; Coale, Ansley J.; et al.

National Academy of Sciences. National Research Council.

Committee on Population and Demography

1982, xviii, 144p. + Glossary : Bibliography, p.133-144

References, p.129-131, En Report no.9

9320643

AID/DSPE-G-0061

Reliable data on recent fertility and mortality levels and trends in the developing world are essential to development planning. This report provides a detailed review of mortality and fertility in Egypt from 1927 to 1979.

After presenting background socioeconomic information, the authors outline changes in fertility and mortality since 1927



(including regional and urban-rural differences), discuss sources of demographic data in Egypt, and describe their methods of estimating fertility and mortality trends.

The authors found that although the crude birth rate rose from 1972-79, overall fertility, marital fertility, and the proportion of women of childbearing age married have been declining since 1960. The reduction in fertility was greatest in large urban areas and was caused by both later marriage and a small decrease in marital fertility. Infant mortality and the crude death rate were found to have declined substantially since the late 1940's. By 1976, infant mortality was half of that in the 1930's and life expectancy had risen from about 30 to about 50 years.

Appendices provide detailed mortality and fertility estimates, a reconstruction of 1927-77 population projections, and data on underregistration of vital events. A 151-item bibliography (1937-81) is included.

173

PN-AAL-750

MF \$1.08/PC \$2.47

Sudan fertility survey, 1979: a summary of findings

World Fertility Survey; International Statistical Institute; U.N.

Fund for Population Activities; U.S. Agency for International Development. Bureau for Science and Technology. Office of Population; U.K. Overseas Development Administration

World fertility survey, no.36, Apr 1982, 17p. : En
9320547

AID/CSD-3606

In the recent past, there has been little or no change in Sudan's relatively high fertility rate of 6.9 births per woman. So concludes this report, summarizing the findings of the 1979 Sudan Fertility Survey. After describing the setting of the survey and its design and sample, the report presents major findings in regard to general population characteristics, nuptiality, fertility, mortality, family size preferences, family planning, and non-contraceptive factors affecting fertility. Policy implications of the findings are considered briefly.

Among the findings are that: Sudan's population is very young, with 47% of the population less than 15 years old; marriage is universal, but age at first marriage is rising; divorce and remarriage are relatively common; early marital fertility is rising but total fertility is static; infant and child mortality are very high; women prefer large families; knowledge of contraception is moderate and actual use very low; and prolonged breastfeeding is a significant constraint on fertility. The authors stress the need for Sudan's populace and planners to recognize the critical role population plays in national development. Six tables are included.

174

PN-AAL-753

MF \$1.08/PC \$6.11

Differentials in age at first marriage

McCarthy, James

World Fertility Survey; International Statistical Institute; U.N.

Fund for Population Activities; U.S. Agency for International Development. Bureau for Science and Technology. Office of Population; U.K. Overseas Development Administration

Comparative studies: cross national summaries, no.19, Jun 1982, 49p. : En

9310547

AID/CSD-3606

Age at first marriage, an important determinant of the average period a woman is exposed to the risk of childbearing, has long been of major interest to demographers. This report describes differentials in age at first marriage within the categories of education and area of residence for 19 countries which participated in the World Fertility Survey (WFS).

The report first notes several problems with comparing WFS data among the countries and briefly reviews national patterns of age at first marriage. Urban-rural and educational differences in age at first marriage are then assessed. Both urban women and women with higher levels of education are less likely to be married before the age of 20 than are rural women or women with less education and are also more likely to have a higher mean age at first marriage. However, the proportion of women ever married differs little by area of residence or education. In all 19 countries, age at first marriage increased over the 5-year period preceding the WFS surveys. The magnitude of the increase varied considerably among countries but little between urban and rural areas within each country. The amount and direction of change varied more among educational groups but there was little pattern to the variation. Appended are detailed first marriage life tables by residence and education for cohorts in 19 countries.

175

PN-AAK-937

MF \$1.08/PC \$7.78

Laparoscopic sterilization with the spring clip: instrumentation development and current clinical experience

Hulka, Jaroslav F.; Omran, Khairia

American journal of obstetrics and gynecology, v.135 (8), 15 Dec 1975, p.1016-1020 : En

Since the early studies of the spring clips used in laparoscopic sterilizations were done, a number of clinically important changes have been made in the clips and in clip applicators. This article records the development and current clinical status of these instruments.

When it was discovered that microscopic gaps occasionally existing between the jaws of the original clips were large enough to permit recanalization and hence pregnancy, manufacturing specifications for the clip were revised to eliminate any gap. Examination of currently available clips revealed no gaps. The silicone rubber end of the original clip was eliminated since it was difficult to manufacture and assemble.

The clip applicators currently available (both one- and two-incision types) have also been greatly improved. With the original one-incision applicator, problems occurred in separating the clip from the applicator, often causing tearing of the patient's tube. There have been no reports of mesosalpingeal



hemorrhage with the new applicators in contrast to the 2% rate reported for nonclip tubal sterilizations.

As of 1977, studies of more than 3,500 women who have undergone clip sterilization show that pregnancy rates were highest when the original clip design and a fixed-optics, one-incision applicator was used. A British study of over 750 patients using the modified clip design and a two-puncture applicator found a pregnancy rate of 0.18%. Studies comparing the original and modified clips to the electrocoagulation and silicone rubber band methods found no pregnancies in any study population; however, the clip was associated with less pain and bleeding.

Although the spring clip was developed by researchers seeking simpler and more reversible sterilization, the objective of reversibility was later abandoned in favor of a safe, permanent, nonelectric method of tubal occlusion. Interest in reversibility remains strong, however, because approximately 1% of the 600,000 American women who annually elect to have a tubal sterilization later seek reversal. To date, clip excision and anastomosis by microsurgery have been limited, but results are encouraging. As of 6/79, of 13 women who wished to become pregnant after clip sterilization and who had anastomoses, all have had intrauterine pregnancies.

176

PN-AAK-938

MF \$1.08/PC \$1.17

Epidemiologic study of risk factors associated with pregnancy following female sterilization

Chi, I-Cheng; Laufe, Leonard E.; et al

American journal of obstetrics and gynecology, v.136(6), 15

Mar 1980, p.768-773 : En

932000537

AID/pha-C-1172

While voluntary sterilization has become the most desirable method of contraception in developed and developing nations, there have been few evaluations of the efficacy of female sterilization methods. In this study, data on 14,700 sterilized women was collected by the International Fertility Research Program (IFRP) from 1972 to 1978 and analyzed to determine risk factors associated with the incidence of pregnancy after sterilization.

Using a case control approach, it was found that younger patients (34 years old or younger) and those not lactating after sterilization had a higher risk of becoming pregnant. Patients sterilized in the early phases of a service program had a higher risk of pregnancy than those sterilized later. In the laparoscopic series, the relative risk of pregnancy was four times greater in patients who had the prototype spring clip than in patients who had the Falope ring. The relative risk was seven times as great when patients who had the prototype spring clips were compared to those who had the Falope ring, electrocoagulation, or the Rocket clip. Patients sterilized by electrocoagulation had a low pregnancy risk, but the risk of an ectopic pregnancy was significantly higher than for those sterilized with mechanical devices. In the culdoscopic series, the tantalum clip had an unacceptable pregnancy risk and should hence be abandoned. Included are a list of 21 references (1971-78). (Author abstract, modified)

177

PN-AAK-941

MF \$1.08/PC \$1.30

Disposable menstrual regulation kits in a non-throw-away economy

Fortney, Judith A.; Vengadasalam, D.

International Fertility Research Program

Contraception, v.21(3), Mar 1980, p.235-244 : En

The development of the flexible plastic cannula and the adaptation of the plastic hand syringe for uterine evacuation combined for a major breakthrough in family planning services, especially in developing countries. This paper describes a study conducted in Singapore to determine the durability of three brands of menstrual regulation kits and comments on how cleaning and sterilizing affects their durability.

Of the 18 syringes tested, only two - both manufactured by International Projects Assistance Services (IPAS) - remained usable after 100 procedures. Both the Burnett and IPAS syringes lasted substantially longer than Rocket syringes. Reasons for unusability varied from one brand to another. All three brands' cannulae were judged to have the same durability. The type of soap used to wash the syringes or the cannulae did not affect durability substantially. In terms of sterilization of the cannulae, disinfectants were judged inferior to soaps.

It is concluded that although these kits may be safely used for more procedures than advertised (normally 50), they may not receive proper attention in many clinics. It is recommended that manufacturers of the kits recognize the actual usage of their products and modify them accordingly.

178

PN-AAL-310

MF \$2.16/PC \$23.40

Sri Lanka oral contraceptive and vitamin study; final report

International Fertility Research Program; U.S. Agency for International Development. Bureau for Science and Technology. Office of Health

Jun 1982, 174p. + appendix : En

9320632

AID/pha-C-1191

To determine the needs and potential for modifications in ongoing family planning services in Sri Lanka, an oral contraceptive and vitamin study was conducted during 1978-81. Double blind clinical trials conducted at three urban and rural sites representative of the country's ethnic diversity determined that: current doses of estrogen and progestagen in two widely used-brands of oral contraceptives (Norinyl and Brevicon) produced clearly differentiated side effects, although this did not significantly affect continuation rates; daily consumptions of a multivitamin affected neither continued use of oral contraceptives nor side effects; and the use of young village women as family planning extensionists, while successful, was not cost-effective.

Details regarding selection of the study sites, the methodologies for conducting the clinical trials, and the trials' results are presented. In addition, research findings are presented regarding medical, social, and logistical causes for the declining usage of IUD's nationwide. Methods are proposed for increasing IUD popularity and usage through education and extension.



179

PN-AAL-314

MF \$1.08/PC \$1.56

Evaluation of family planning communications in El Salvador

Bertrand, Jane T.; Zelaya, Jose David Araya; et al
International journal of health education, v.24(3), 1981,
p.183-194 : En

One of the primary means of promoting family planning is an information-education-communication (IEC) program. To measure the effects of El Salvador's 10-year IEC program, data were collected during a 1978 Contraceptive Prevalence Survey (CPS) of 1,300 households. Results of the CPS, reported herein, are divided according to those which reflect past and current IEC efforts and those which can guide future efforts.

The survey indicated that the IEC program has had broad coverage - almost 100% of women in San Salvador and over 90% of rural women have seen or heard family planning messages. Radio has been by far the most effective medium, followed by pamphlets and interpersonal channels. Exposure has been lower among women who: are unemployed or work at home; have little education; are not married or in union; are under 19 or over 40; and have no children or many children. Nationwide, 34.4% of Salvadorean women, aged 15-44 and married or in a union, were using contraceptives. Obstacles to family planning included - in order of importance - lack of husband-wife communication, rumors about contraceptive methods, religious beliefs, and belief in the value of a large family.

Findings reflected the fact that El Salvador has one of the most aggressive IEC programs in Latin America and also established the importance of reaching the crucial group of women aged 15-19.

180

PN-AAL-374

MF \$2.16/PC \$16.90

Opportunities for private sector family planning information and service activities in Kenya

Saunders, Lyle
U.S. Agency for International Development. Bureau for
Science and Technology. Office of Health; American
Public Health Association

14 Jul 1982, ix, 28p. + 5 appendices : En
9365900

Despite its rapid population growth, Kenya has never seriously promoted family planning. This report assesses the opportunities for involving the Kenyan private sector in family planning activities.

After first considering the possible role of Kenya's proposed National Council on Population and Development, the author discusses potential private sector contributors to family planning and examines specific areas (e.g., community-based distribution, information dissemination) where private sector efforts would be appropriate.

The author concludes that significant private sector involvement should not be expected quickly as private agency staff seem to share with many Kenyans a resistance to family planning. However, the National Council, if established as planned, will formally link the private sector to the national family planning effort. Council activities should focus on wider

use of mass media, more realistic approaches to the young, expanded contraceptive distribution, management training for private agency staff, and cost-benefit analysis of existing family life education programs. Descriptions of interested agencies and proposed National Council projects are appended.

181

PN-AAL-792

MF \$1.08/PC \$1.30

Potential demand for voluntary female sterilization in the 1980s: the compelling need for a nonsurgical method

Kessel, Elton; Mumford, Stephen D.
International Fertility Research Program; U.S. Agency for
International Development. Bureau for Science and
Technology. Office of Population
Fertility and sterility, v.37(6), Jun 1982, p.725-733 :
References, p.732-733, En
932000537
AID/pha-C-1172

Given the fragile condition of health care delivery systems in the developing world and the rural residence of the population, there is a compelling need for a non-surgical method to meet the growing demand for voluntary female sterilization. Against a background description of the potential demand for such sterilization in the 1980's, the effectiveness of nonsurgical female sterilization via uterine administration of quinacrine is considered.

The shortcomings of existing technology are examined; surgical sterilization is inadvisable in areas having primitive operating conditions and no skilled paramedical personnel. Of the new methods which offer promise, the Erb method requires high technology, while the methylcyanoacrylate chemical approach and immunologic approaches require prolonged safety studies. The chemical quinacrine, already used extensively as an antimalarial, has been studied for 10 years and been found to have a low incidence of life-threatening complications compared to surgical procedures. Despite an estimated lifetime failure rate of 3 per 100 women and the need for several more years of research to complete contemplated improvements, it is seen as a safe and deliverable method that has the potential to meet the great increase in sterilization needs in the 1980's. A 35-item bibliography (1956-81) is included.

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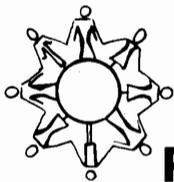
PN-AAL-811

MF \$1.08/PC \$0.78

Comparison of the Lippes Loop D and tapered Lippes Loop D intrauterine devices

Behlilovic, Branko; Etman, Sayed; et al.
International Fertility Research Program; U.S. Agency for
International Development. Bureau for Science and
Technology. Office of Population
Contraception, v.25(3), Mar 1982, p.293-298 : En
932000537
AID/PHA-C-1172

One effort to improve IUD performance with respect to expulsion rates has involved tapering the standard Lippes Loop D (LLD). This article presents data from two comparative studies in which tapered and standard LLD's were randomly allocated among 989 women.



POPULATION

Expulsion rates for the tapered device were found to be lower at 6 months and at 12 months than were rates for the standard device. When the women were divided into groups according to uterine measurement, the differences in expulsion rates were significant for women with larger uteri; the number of women with smaller uteri was too small to provide significant results. Comparison of other termination event rates showed no significant differences. Analysis of the data indicates that the tapered LLD represents an improvement in expulsion rates over the standard LLD. (Author abstract, modified)

183

PN-AAL-813

MF \$1.08/PC \$1.17

Access to postpartum sterilization in Southeast Brazil

Janowitz, Barbara; Higgins, James E.; et al.
International Fertility Research Program; U.S. Agency for International Development. Bureau for Science and Technology. Office of Population

Medical care, v.20(5), May 1982, p.526-534 : En
932000537
AID/PHA-C-1172

Although female sterilization is a popular family planning method in Brazil, its availability is limited by legal and institutional constraints. The study reported here examined factors associated with access to sterilization; 2,194 maternity patients in a major hospital in the city of Campinas were interviewed.

Of 375 women who planned to be sterilized postpartum and knew of the availability of services, 40% were not sterilized. Results show that the likelihood of sterilization is strongly influenced by two factors – the method of payment for care and Cesarean delivery. Wealthier women are more likely to be sterilized than are the poor, whose care is financed by government insurance (which does not cover sterilization). Results also show that women sterilized postpartum almost always have had Cesarean deliveries. Although both poor and wealthy women who have had Cesarean deliveries are equally likely to be sterilized, wealthier women are much more likely to have had this type of delivery. Policy implications of this differential accessibility to sterilization are discussed.

184

PN-AAL-814

MF \$1.08/PC \$.78

Comparison of tubal ring and Madlener's techniques of tubal ligation in postpartum cases

Sheth, Shirish S.; Verke, A.; et al.
International Fertility Research Program; U.S. Agency for International Development. Bureau for Science and Technology. Office of Population

Journal of obstetrics and gynaecology of India, v.31(1), Feb 1981, p.43-48 : En
931000537
AID/PHA-C-1172

The tubal ring technique of tubal ligation, a laparoscopic approach to female sterilization, has been frequently used since its introduction in 1974. This paper reports the findings of a study in Bombay, India comparing the tubal ring technique with the traditional Madlener's technique of tubal ligation in post-partum women.

During a 17-month period, 300 women requesting sterilization participated in the study. Shortly before operation, random cards were used to select one of the techniques; patients and evaluators were kept unaware of the choice to insure objectivity in their observations. Follow-up checks were made after 7 days, 6 months, and 1 year. Mean surgical time was 7.9 minutes for the tubal ring and 9 minutes for Madlener's technique; mean operating room time was 15.4 and 16.7 minutes, respectively. Incidence of menstrual pattern changes, abnormal menstrual cycles, and lactational amenorrhoea did not significantly differ for the two techniques; no pregnancies were reported at the end of one year for either technique. Backache was more common for women sterilized with the tubal ring; however, 23.4% of tubal ring patients had no complaints while only 19% of Madlener's technique patients had no complaints. The paper concludes that either technique of tubal occlusion can be performed safely in post-partum women.

185

PN-AAL-876

MF \$1.08/PC \$6.50

Analysis and recommendations: Lesotho

Robinson, Leonard H. Jr.
Battelle Human Affairs Research Centers
1981, 47p. : Bibliography, p.29, En
698066204
AID/afr-C-1702

Interviews were held with key Basotho government and private sector individuals to determine knowledge and attitudes regarding population dynamics. Against a background discussion of major population issues and trends in Lesotho and of external population assistance, the results of these interviews are analyzed in this report.

A qualitative (rather than quantitative) awareness of Lesotho's shifting and growing population and of its effect on national development was found to exist. Respondents assigned population growth and its negative effects on rural women, the labor force, land resources, and the overall economy to a variety of economic, social, cultural, and political causes. Respondents disagreed as to whether a government population policy existed, the majority maintaining that an explicit policy to promote family planning (FP) is needed despite political, social, and religious opposition.

Respondents cited four areas where external population assistance is needed: (1) promoting FP as part of maternal/child health care; (2) population, sex, and family life education, especially for men; (3) promotion of rural income-generating activities, especially for women, along with development of appropriate energy technologies; and (4) development planning, including data collection/analysis, dissemination of information on population management, and skill training for specific target groups. All agreed that assistance should be short-term and stress the training of Basotho nationals. Recommendations for a USAID/L population assistance strategy conclude the report. The interview questions are appended.



186

PN-AAL-161
MF \$2.16/PC \$15.73

Quantitative data for rural development: options for improvement in A.I.D.

Hermann, Chris

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

Jan 1982, iv, 113p. : References, p.112-113, En OTR-0091-0-00-1206-00

Building on an earlier report summarizing A.I.D.'s use and management of socioeconomic data in rural development projects, this report identifies institutional, organizational, and operational issues in A.I.D.'s data use and management and recommends options to resolve them.

Institutional issues include the need to develop a data use and management policy and encourage corresponding capabilities in both AID-assisted countries and - through recruitment, training, and career advancement - within A.I.D. itself. To better coordinate data services, it is recommended either to create a unit to supervise existing data service units or to create a single Office of Information Services under the Office of the Science Advisor. Operational recommendations are that A.I.D. acquire documented micro-level data, e.g., by making access to project and research data a contractual obligation, and resolve existing data use and management problems. Other recommendations to improve A.I.D. data use and management include reviewing data collection and analysis efforts more systematically and acquiring microcomputers to decentralize data use.

187

PN-AAL-317
MF \$3.24/PC \$32.76

Approaches to planning for secondary cities in developing countries

Rivkin Associates, Inc.; U.S. Agency for International Development. Bureau for Development Support. Office of Urban Development

Feb 1982, 253p. : En 9310058

AID/OTR-C-1837

Secondary cities - those just below the level of large metropolises and just above market communities and small towns - are or can become nodes of diversified economic development. This report discusses the characteristics of the secondary city in developing countries and the reasons for and various approaches to intervention in support of secondary cities; the effectiveness of urban planning and land use management; and the most practical forms of international assistance.

Case studies are presented from five countries in varying stages of development - Brazil, Korea, Tunisia, Indonesia, and Kenya - which support programs to strengthen secondary cities. Reviewed are the approaches, experiences, and lessons of these countries' programs. Next, A.I.D.'s experience under its Land Use Programming Demonstration Project in Nicaragua, Thailand, and Ghana is briefly discussed. Lessons drawn from this experience are enumerated.

The role of land use planning was found to be small, with long-term objectives given little credence, except in Korea; instead, project implementation was emphasized. International assistance should focus on selectively choosing communities

to be assisted and on designing project packages and strategies for these communities. Appended is an outline for a secondary city appraisal report.

188

PN-AAL-832
MF \$1.08/PC \$6.24

Rural development and effective extension strategies: farmers' and officials' views

Sallam, Mohamed S.; Knop, Edward C.; Knop, S.A. Consortium for International Development; Colorado State University. Engineering Research Center; Egypt. Ministry of Irrigation. Water Distribution Research Institute.

Research Center; U.S. Agency for International Development. Bureau for Near East. Egypt

n.d., v, 43p. : En Technical report no.19 2630017

AID/NE-C-1351

The first step in any extension program should be to determine the needs of the constituent population and the best means for fulfilling them. Toward this end, 75 Egyptian farmers from three representative areas of the Nile Valley and agricultural officials from all levels of government were surveyed. Researchers asked opinions about the helpfulness of various people in forwarding rural development, what changes were desirable, and what implementation strategies should be selected. Responses are presented against a review of current agricultural and irrigation development and extension activities in Egypt; relevant implications are deduced.

The data indicate that Egyptian farmers and agricultural officials have a sophisticated and shared understanding of their problems and favor strategies for their solution which agree with those advocated by development specialists. The importance of local, grassroots interest and cooperation are noted. Farmers consider those areas over which they themselves can maintain control as the best basis for rural development. They also value highly tactics which improve their own effectiveness as farmers. The data, broken down by survey subsample, are appended.

189

PN-AAL-873
MF \$1.08/PC \$3.90

Intermediate cities in developing countries: a comparative analysis of their demographic, social and economic characteristics

Rondinelli, Dennis A.

Syracuse University. Maxwell School of Citizenship and Public Affairs; U.S. Agency for International Development. Bureau for Science and Technology. Office of Urban Development

Third world planning review, v.4(4), Nov 1982, p.357-386 : References, p.385-386, En

In an effort to foster decentralization and balanced growth, many donors and LDC governments have become increasingly interested in promoting the development of intermediate cities. This paper reviews demographic, social, and economic characteristics of intermediate cities in developing countries and comments on their role in development.

First, the paper defines intermediate cities as those with populations larger than 100,000 but smaller than the population of a country's largest city. Other characteristics of such cities



HUMAN SETTLEMENTS

and demographic data are then examined, revealing that population growth in intermediate cities since 1950 has not been as rapid as in smaller and larger cities. A review of socioeconomic data shows that intermediate cities exhibit a combination of urban and rural socioeconomic and physical characteristics. Intermediate city economies vary in composition but tend to be dominated by commercial and service activities and have a disproportionately small share of industry and employment. Intermediate cities rank above smaller cities but below larger ones in regard to the quality of social services. Lastly, the paper notes that intermediate cities have in the past played a weak role in development because they have received a disproportionately low share of national investment in infrastructure, services, industry, and other areas.

190

PN-AAL-926

MF \$1.08/PC \$4.03

Building better communities

U.S. Agency for International Development. Bureau for Private Enterprise. Office of Housing
n.d., iv, 25p. : En
Spanish version: PN-AAL-927

A.I.D. generally requires that potential participants in its Housing Guaranty Program incorporate home owners associations or similar legally based community organizations in their programs. This booklet informs lending institutions, as well as potential sponsors, developers, and builders, about ways to include home owners associations in their housing programs as a tool for greater community stability and interaction.

A home owners association is defined as an incorporated nonprofit organization of resident home owners formed to control and regulate the use of common property. The booklet describes the association's legal base, including covenants and maintenance assessment. Association operations - start-up, duties of the board and its officers, membership responsibilities, and the functions of standing committees - are outlined. The booklet concludes by demonstrating that incorporating home owners associations into developers' plans makes possible innovative use of common areas, economic design, and variety in housing styles and prices. Home owners associations are also an effective means of assuring that responsibility for community control and management are carried on after the sponsor has fulfilled his obligation.

191

* PN-AAL-970

MF \$3.24/PC \$32.24

Urban development in the Third World: policy guidelines

Herbert, John D.
Planning and Development Collaborative International, Inc.
1979, xiii, 238p. : En
Revision of: *Guidelines for formulating projects to benefit the urban poor in the developing countries*
9310016
AID/TA-C-1107
* Praeger Publishers, Praeger Special Studies, 383 Madison Ave., New York, NY 10017

In 25 years, the developing countries may have a total urban population of about 1.4 billion, equivalent to the combined 1970 populations of China, India, and Brazil. This paper identifies a

number of relatively low-cost, quick-impact projects that are likely to benefit the urban poor in the developing world.

First, the author sets the context for urban development, describing the origins and scale of urban poverty, the general goals of projects for the urban poor, the variety of urban poverty target groups, and the role of impact analysis in project identification and development. Next, the author provides basic information on the following important types of urban development projects: employment and productivity; water supply and sanitation; health services; education; housing; transportation; and management and finance. The role of each sector in development is examined; high-impact projects are identified and are then discussed with regard to their policy implications, management, and financing, and their likely impact on groups other than the urban poor. Major complementary actions that may be desirable with particular types of projects are also identified. A final chapter discusses intersectoral links in urban development and potential links between urban and rural projects. Illustrative project data and a 37-item bibliography (1964-78) are appended.

192

PN-AAL-229

MF \$1.08/PC \$4.68

Improvement of adobe houses in Peru: a guide for agencies

Cuny, Frederick C.
Intertect
Apr 1979, 34p. : En
9310221
AID/ta-c-1345

Adobe construction is an ancient practice in Peru and the high cost of alternative materials assures its continuance. This illustrated booklet is designed to introduce housing program personnel to methods for improving adobe houses' resistance to earthquakes.

Following background information on the prevalence of and demand for adobe construction and on the adobe building process, the weak points of adobe construction, its dangerous features, and problems associated with adobe blocks are described and recommendations made. Next, four ways to increase seismic resistance are described: adherence to basic building rules for seismic areas; improved wall design; proper distribution of roof weight; and improved fabrication. Finally, the authors suggest that the best way to improve adobe housing is to provide builders and/or homeowners with the necessary materials and technical expertise. Materials subsidies have been shown to work better than low-interest loans.

Technical resources available in Peru are listed; appendices provide damage descriptions, a guide to obtaining housing information in Peru, and a 42-item bibliography.

193

PN-AAL-230

MF \$1.08/PC \$2.60

Analysis of the potential for housing improvement in high risk, vulnerable areas of Peru

Cuny, Frederick C.
INTERTECT
Apr 1979, (19p.) : En
9310221
AID/ta-c-1345



Since the 1970 earthquake, the Government of Peru has studied how to reduce the vulnerability of traditional housing. This paper analyzes the potential for such a reduction.

Maps and figures are used to identify Peru's seismic regions and vulnerable areas and the main types of non-engineered buildings in which 80% of Peruvians live. Obstacles to improved housing are noted. Chief among these is the country's economic instability, followed by the centralization of development activities in Lima, bureaucratic bottlenecks, the concentration of resources in other sectors, and the lack of skilled technical personnel.

Following a review of the capabilities and limitations of the indigenous (public and private), foreign (national and international), and voluntary agencies active in Peru's housing sector, it is concluded that the potential for reducing housing vulnerability, while real, is limited. With the establishment of minimum earthquake-resistant standards not yet a housing sector priority, the probability of large-scale reductions in housing vulnerability remains low.

194

PN-AAL-333

MF \$15.12/PC \$173.94

International workshop: earthen buildings in seismic areas

May, Gerald W.

U.S. Agency for International Development. Office of U.S. Foreign Disaster Assistance; Appropriate Technology International; U.S. National Science Foundation; University of New Mexico. College of Engineering; INTERTECT Albuquerque, NM, 24-28 May 1981

(International workshop: earthen buildings in seismic areas, US)

Sep 1981, 3v. : Bibliography, Vol. 3 p.71-87, En, Es
Vols 1-2: Conference proceedings, Vol. 3: Conference report on research needs and priorities

Although adobe is the predominant building material in many seismically active areas worldwide, little effort has been expended in applying existing earthquake engineering knowledge to traditional earthen construction. This three-volume report is a compendium of papers presented at an international conference of researchers and field personnel held in Albuquerque in 1981 to address this problem. The emphasis of the workshop was on non-engineered adobe houses in seismic areas, although information about related forms of earthen and unreinforced masonry structures was also presented and discussed.

Presentations on seismic design and earthen buildings aimed at clarifying problem areas, defining the state of the art, identifying current applicable research and research needs, and exploring possibilities for international cooperative research and technology transfer. These concerns were examined in regard to: (1) structures; (2) materials; (3) social, economic, and cultural aspects; (4) program implementation; and (5) building codes, specifications, and standards. Supporting charts, photographs, and references are included.

195

PN-AAL-352

MF \$1.08/PC \$8.84

Evaluation du secteur de l'habitat social d'Haiti (Sector evaluation of the social environment of Haiti)

U.S. Agency for International Development. Bureau for Development Support. Office of Housing
 Dec 1980, 49p. : Fr

Most of the Haitian population lives in substandard housing without access to water. This report sums up analyses of Haitian public housing made in the 1970's by the International Development Bank, the World Bank, and the U.N. and presents a strategy for housing improvement.

The historical background and actual housing conditions are outlined, as are the principal constraints to improving housing, e.g., lack of a definitive Haitian Government housing policy or institutional capacity, few experienced private builders, and insufficient credit. Haiti's socioeconomic characteristics are outlined and technical aspects of supplying public housing are reviewed. An inventory of housing at three Haitian locations is presented. Finally, the housing allocation system is described as affected by financing and institutions, and by A.I.D.'s strategy. It is concluded that unless domestic resources are mobilized, plans for public housing will not be realized. A 10-item bibliography (1972-80) is attached.

196

PN-AAL-417

MF \$2.16/PC \$20.02

Eighth conference on housing in Africa

Kimm, Peter M.

U.S. Agency for International Development. Bureau for Private Enterprise. Office of Housing; University of Botswana

(Conference on Housing in Africa, 8th, Gaborone, BW, 30 May-4 Jun 1982)

May-Jun 1982, vii, 138p. : En

Also available in Spanish: PN-AAL-857

African countries must face the enormous problem of providing shelter for 120 million poor urban and rural households by the end of the 1980's. This paper reports the proceedings of a 1982 AID-sponsored conference held in Botswana to discuss ways in which African nations can become self-reliant in housing.

Included are a keynote speech applying the conference theme of self-reliance to the situation in Botswana, and papers presented at three of the conference's four plenary sessions and at its discussion groups. The first two plenary sessions focused on developing sound housing policies and on training for self-reliance in housing. Training and issues of housing finance were the major themes of the nine discussion group papers; the third plenary session consisted of discussion group reports on these two themes. Presentations made at the conference's fourth plenary session by representatives of various countries and organizations are not included in these proceedings. Attached is a list of participants.



HUMAN SETTLEMENTS

197

PN-AAL-839

MF \$4.32/PC \$45.63

Low cost housing technology: an East - West perspective

Goodman, Louis J.; Pama, R.P.; et al.
East-West Center
1979, xiv, 345p. : En

The scarcity of low-cost housing is a serious national problem in both developed and developing countries and as such lends itself to cross-national and cross-cultural examination. This illustrated monograph, an output of the East-West Center's Low-Cost Housing Project, focuses on technological innovations in low-cost housing, with consideration given to the need to: reduce the cost of housing units, create jobs in the construction materials and building industries, consider the attitudes of the people concerned, and provide complementary low-cost water supply and waste disposal system.

The book is divided into two parts. The first part examines low-cost housing policy, financing, and technologies in a variety of socioeconomic settings in the Philippines, Indonesia, Thailand, Korea, and Hawaii. The second part discusses several important topics in the realm of low-cost housing: construction materials; criteria for seismic design of unreinforced masonry and adobe; the potential contribution of higher education to providing low-cost housing; and low-cost housing information. A subject index is included.

198

PN-AAL-855

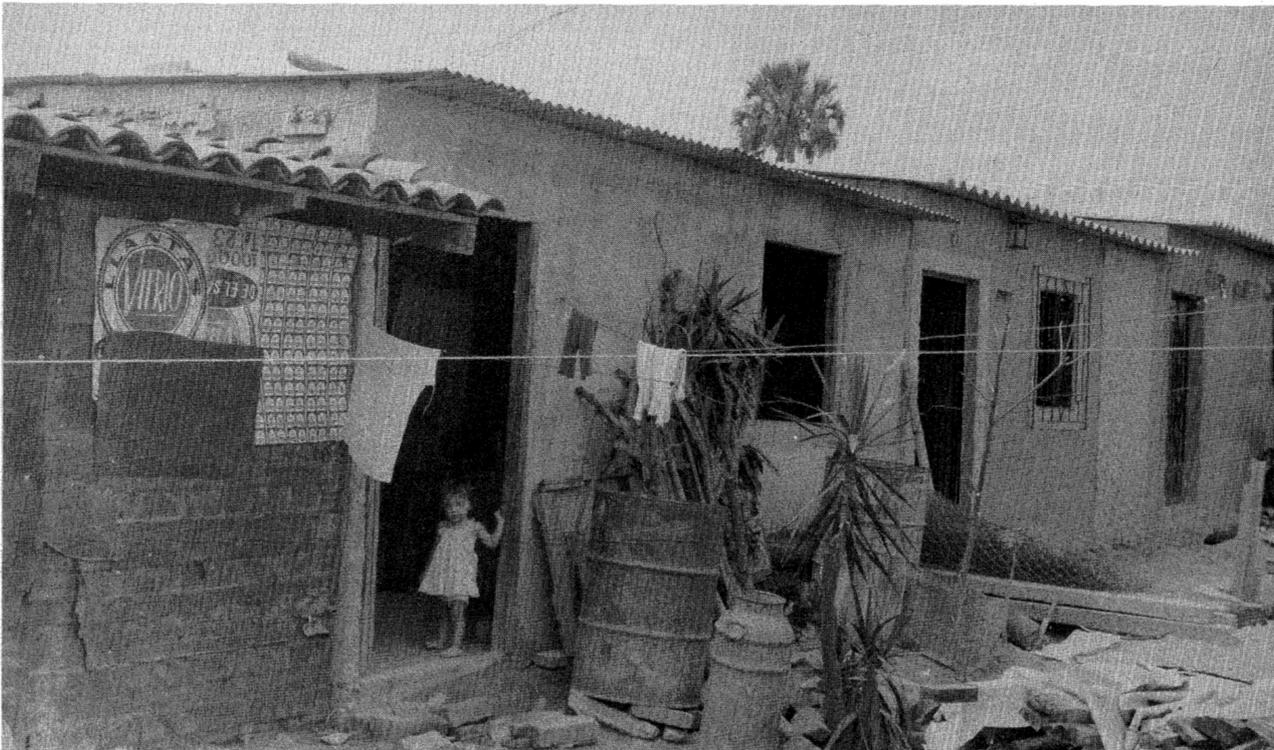
MF \$3.24/PC \$26.65

Squatter settlements and housing policy: experiences with sites and services in Colombia

Popko, Edward S.
U.S. Agency for International Development. Bureau for Science and Technology. Office of Housing
Occasional paper series, 30 Mar 1980, vi, 200p. : Bibliography, p.193-200, En

In the past 20 years, donor policy concerning squatter settlements has gradually shifted from an emphasis on massive government intervention to a sites and services (SAS) approach which focuses on stimulating private investment to further self-help efforts by the poor, an approach which closely resembles the self-help model of the progressive slum. Recent SAS projects, however, have proven disappointing and have cast the assumed relationship between public and private investment into doubt. Against background descriptions of the squatter problem and of the components of the SAS approach, this A.I.D. policy paper presents the results of research conducted in one slum upgrading and two SAS projects in Colombia to determine the causes of this disappointment.

The case studies show that the interrelationships between lot sizes, incomes, rental units, ability to pay, subdivision layout, and technical assistance are more complex than previously believed and are unlikely to be altered by proposed changes in SAS policy. An alternative set of capital programs which recognizes the dual purpose of homeowner investments is proposed in order to address these constraints. Appendices include two home interview surveys and a 75-item bibliography (1957-78).



Low-cost housing solutions such as this help alleviate the widespread problem of urban overcrowding.



199

PN-AAK-971

MF \$3.24/PC \$26.78

Draft environmental profile of The Sultanate of Oman

Speece, Mark W.

University of Arizona. Office of Arid Lands Studies. Arid Lands Information Center; U.S. Agency for International Development. Bureau for Science and Technology. Office of Forestry, Environment and Natural Resources; U.S. Department of State. National Committee for Man and the Biosphere; U.S. Department of the Interior. National Park Service

Jun 1981, ix, 203p. : En

9311113

RSSA-SA/TOA-1-77

Although the Sultanate of Oman has begun to address the country's environmental problems, it is still in the beginning stages of development, lacking manpower trained in environmental technology, detailed environmental data, and environmental institutions. In this draft profile, a review is made of Oman's geography and climate, demographic and economic characteristics, environmental resources, and problems in regard to geology, mineral resources, soils, agricultural land use, vegetation, and fauna. The Sultanate's conservation policy, a major component of which is protection of endangered wildlife, is outlined. Major environmental problems include: natural water shortages, often worsened by prolonged drought; over-pumping, leading to high soil salinity; rural health problems (malaria, gastro-enteritis, dysentery) aggravated by lack of sanitation and unprotected water sources; and oil spills along the coast. A 7-page bibliography (1959-81) is appended.

200

PN-AAL-220

MF \$1.08/PC \$11.57

Draft environmental profile on Belize

Hilty, Steven L.

U.S. Department of State. National Committee for Man and the Biosphere; University of Arizona. Office of Arid Lands Studies. Arid Lands Information Center; U.S. Agency for International Development. Bureau for Science and Technology. Office of Forestry, Environment and Natural Resources

Feb 1982, viii, 87p. : En

RSSA-SA/TOA-1-77

In Belize, environmental conditions are largely the result of the timber industry's historic predominance and the corresponding delayed development of agriculture. So concludes this draft profile of the nation's geography, climate, population, land use, geology and soils, water resources, flora and fauna, and environmental problems.

Extensive logging has depleted forests of harvestable mahogany, logwood, and pine trees. Reforestation has been hampered by the loss of extensive areas of coastal forests to hurricanes, fire, and disease.

Population surges due to the relocation of the country's capital to Belmopan and the government's encouragement of greater participation in the agricultural sector and migration to augment the small labor force could cause serious environmental problems unless monitored closely. Also of concern is the lack of any officially protected areas; while 13 sanctuaries have been designated, none have been protected.

Appended are 61 references (1935-80), a list of A.I.D. programs in Belize, a proposed U.S. National Park Service activity, a list of Belizean mammals, and a 79-item bibliography (1867-1970).

201

PN-AAL-233

MF \$1.08/PC \$2.73

Que son los terremotos? (What are earthquakes?)

Raymond, Loren; Huaco, Daniel

Peru. Ministry of Housing and Construction. Office of Research and Standards

n.d., 18p. : Es

9310221

AID/ta-c-1345

In the aftermath of an earthquake, many questions abound as to the causes and effects of this phenomenon. This report provides answers to just such questions as posed by Peruvians to post-earthquake extensionists.

After explaining the geophysical causes of earthquakes, two types of waves (lateral and vertical) produced by earthquakes and the mechanics of wave action on the movement and destruction of buildings are described. Recommendations for earthquake-resistant structural design - wall height, thickness, and weight - are made.

Given the long history of earthquake occurrence in Peru and other areas of the world, the desirability of scientifically predicting seismic activity is recognized; some methods for measuring earth movements and for seismic monitoring are discussed. Finally, a variety of questions regarding the structure and movement of earth layers in relation to seismic activity are answered.

202

PN-AAL-300

MF \$1.08/PC \$7.80

Social and environmental consequences of natural resources policies, with special emphasis on biosphere reserves; proceedings of the international seminar

Ffolliott, Peter F.; Halffter, Gonzalo

U.S. Agency for International Development. Bureau for Science and Technology; U.S. Department of State. National Committee for Man and the Biosphere; U.S. Department of Agriculture. Forest Service. Rocky Mountain Forest and Range Experiment Station

(International Seminar on the Social and Environmental Consequences of Natural Resources Policies, with Special Emphasis on Biosphere Reserves, Durango, MX, 8-13 Apr 1980)

USDA Forest Service general technical report, no.RM-88, Aug 1981, 57p. : En

Natural resource policies have far-reaching social and environmental consequences. The Man and the Biosphere National Committee hosted a 4/80 seminar in Mexico, bringing together over 65 policymakers, scientists, and educators from North, Central, and South America to promote cooperation on this issue.

This report constitutes the proceedings of the seminar - 20 invited and volunteered papers and summaries of participants'



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visits to the La Michilia and Mapimi Biosphere Reserves. Specific topics covered included ecological approaches to forest management, land use, grazing, wildlife management, integrated rural development, natural resources research and higher education, and tropical forest management. Most papers pertain to the situation in Mexico; some concern the United States. A list of seminar participants is attached.

203

PN-AAL-327

MF \$3.24/PC \$37.31

Draft environmental profile of Zambia

Speece, Mark W.

U.S. Department of State. National Committee for Man and the Biosphere; U.S. Department of the Interior. National Park Service; University of Arizona. Office of Arid Lands Studies. Arid Lands Information Center

Mar 1982, iv, 288p. : Bibliography, p.272-288, En
AID RSSA SA/TOA 77-1

National Park Service contract no. CX-0001-0-0003

Zambia, a landlocked country with little industrial development, faces serious rural and agricultural environmental problems. Thus concludes this draft environmental profile summarizing available information on Zambia's geography, climate, population, economy, geology, mineral resources, water resources, soils, agricultural land use, vegetation, and fauna.

The profile concludes that Zambia's major environmental problems are: soil erosion, causing the loss of up to 3 million tons of topsoil yearly; deforestation, resulting from slash and burn agriculture, firewood gathering, and charcoal production; range degradation due mostly to overgrazing; and widespread health problems due to contaminated water and inadequate sanitation. Industrial pollution, while not a major problem, has become serious in mining areas. Finally, Zambia's wildlife is threatened by hunting and poaching, habitat destruction, and overpopulation. Included are a list of literature cited and appendices providing more detailed information on Zambia's natural resources and environment.

204

PN-AAL-433

MF \$1.08/PC \$11.96

What's wildlife worth? economic contributions of wild plants and animals to developing countries

Prescott-Allen, Robert; Prescott-Allen, Christine

U.S. Agency for International Development; U.S. Department of State. National Committee for Man and the Biosphere; World Wildlife Fund - U.S.; PA DATA; Earthscan

1982, 92p. : References, p.84-90, En

Even in the wake of the agricultural revolution, wild plants and animals remain economically significant for developing countries, according to this report. Animal resources cover the gamut from marine species such as fish and shrimp to land animals ranging from frogs and lizards to small wild animals and larger game. Plants are exploited for edible leaves, roots, fruits, and nuts, and for non-edible, useful vegetative matter.

Traditional uses of wild plants and animals are many and varied, ranging from nutritional (offering dietary nutrients and variety) to medicinal (as in Ayurvedic and other traditional health systems), and from practical (as when used for fuelwood or trade items) to scientific (as when used for genetic research

to strengthen producing varieties). While critical to maintaining balanced ecosystems, indigenous wildlife is threatened even while beginning to be recognized for its intrinsic worth. Evaluation of the economic, cultural, and ecological import of wildlife, while complex and difficult, is necessary in order to provide hard data on which to base inclusion of wildlife conservation programs in national development strategies. An 8-page bibliography is appended (1953-82).

205

PN-AAL-800

MF \$1.08/PC \$2.21

Natural resource inventories in developing countries: the case of Central America

Dulin, Paul A.

Centro Agronomico Tropical de Investigacion y Ensenanza.

Departamento de os Naturales Renovables; Swiss

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

1982, 16p. : Bibliography, p.14-16, En
5960089

Accurate information is paramount in planning for the rational development and allocation of natural resources in developing countries. This paper discusses the past and present lack of such information in Central America and the history of natural resource inventories in the region.

Resource exploitation is examined in terms of inherent socioeconomic pressures, poverty, government policy, and the energy crisis. Described next are the existing environmental, socioeconomic, political, and institutional factors which influence the collection of natural resource information in Central America. The history of natural resource inventories since 1918 is briefly reviewed.

Current inventory activities are affected by a growing concern for the environment, development of remote sensing from satellites, and the evolution of computerized information management. These factors have only recently been applied to Central America through technical assistance and training programs. It is concluded that resource inventories in Central America are still developing. Recommendations for hastening and improving this process are provided. A list of 29 references (1918-80) is included.

206

PN-AAL-841

MF \$2.16/PC \$15.73

Draft environmental profile on Guyana

Hilty, Steven L.

U.S. Department of State. National Committee for Man and the Biosphere; U.S. Agency for International Development. Bureau for Science and Technology. Office of Forestry, Environment and Natural Resources; U.S. Department of the Interior. National Park Service; University of Arizona. Office of Arid Lands Studies. Arid Lands Information Center

Apr 1982, viii, 114p. : Bibliography, p.109-114, En
RSSA SA/TOA 1-77

National Park Service contract no. CX-0001-0-0003

Guyana, with exceptionally rich natural resources, most of which remain unexploited, is in the unique position of being able

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to take steps to manage its resources before environmental degradation occurs. Derived from information available in the United States, this draft report profiles Guyana's environmental resources and reviews the impact of the development process upon those resources.

Covered in turn are the country's geographic features; climate; population, including cultural and demographic considerations; land use; soil, mineral, water, and electrical power resources; and flora and fauna. Guyana's major environmental problems are confined to the coastal areas, where 10%-15% of the country's land supports 90% of the population.

Especially noted are the needs to develop alternative irrigation water sources to protect the coastal arterial wells which supply most of the country's water, and to maintain the fragile, sandy soils of natural forests which have been or will be harvested. Establishment of a national environmental policy and the training of skilled personnel is crucial to planning for rational, long-term utilization and protection of resources that will be exploited in the future. Appendices include supporting information on endangered animals of Guyana.

207

PN-AAL-842

MF \$2.16/PC \$16.25

Draft environmental profile of the Kingdom of Lesotho

Hilty, Steven L.

U.S. Department of State. National Committee for Man and the Biosphere; U.S. Agency for International Development. Bureau for Science and Technology. Office of Forestry, Environment and Natural Resources; U.S. Department of the Interior. National Park Service; University of Arizona. Office of Arid Lands Studies. Arid Lands Information Center

May 1982, viii, 121p. : Bibliography, p.107-121, En
RSSA SA/TOA 1-77

National Park Service contract no. CX-0001-0-0003

The Kingdom of Lesotho, with few natural resources, little arable land, and very low agricultural productivity, faces a difficult future. In this draft environmental profile, a survey is presented of the country's climate, geography, population, land use, agriculture, natural resources, fauna, conservation measures, and environmental, soil, and water conservation problems.

The most serious environmental problem is soil erosion; loss of soil and declining soil productivity is increasing, despite efforts to reverse the trend. Much of the responsibility lies with an unsuitable land tenure system which allows unrestricted grazing, resulting in loss of native flora and fauna. A high growth rate in the population, most of it crowded into the western third of the country, increases pressures on arable land. In addition, a shortage of personnel skilled in administration, planning, and policy hampers environmental and agricultural programs. A 64-item bibliography (1935-82) is included, and an additional supplementary 13-page bibliography (1905-80) appended.

208

PN-AAL-772

MF \$1.08/PC \$12.74

Suggestions for a regional watershed management project

Dulin, Paul A.

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

20 Sep 1982, iv, 89p. : En

596000060

596-0000-C-00-2029-00

Two consultants were hired to assess country needs and capabilities in preparation for a proposed A.I.D. regional water management project in Central America. The result of the consultancy in Costa Rica, Nicaragua, and Panama is herein presented.

After exemplifying the importance of watershed management in the region through reviews of water use and the extent of watershed degradation in the three countries, the author provides brief profiles of Costa Rican, Panamanian, and Nicaraguan government institutions involved in water use/management; principal information agencies (including the regional efforts of the Instituto Interamericano de Documentacion e Informacion Agricola); and educational and training infrastructure. Key problems, including discrepant legal bases for delegating institutional responsibilities, uncoordinated information collection, and weak or absent educational infrastructure for training, are noted.

The design of a 5-year regional project, to be coordinated by Costa Rica's Centro Agronomico Tropical de Investigaciones y Ensenanza (CATIE) and aimed at strengthening the watershed management capabilities of national institutions, is proposed. An overview of CATIE's Wildlands and Watershed Management Program and guidelines for a project design document are included among the appendices.

209

PN-AAL-836

MF \$3.24/PC \$29.51

Regional training course in natural resources management and environmental monitoring in humid-tropical ecosystems

Ffolliott, Peter F.

University of Arizona; U.S. Agency for International Development. Bureau for Science and Technology

Feb 1980, viii, 221p. : Bibliography, p.215-221, En
9310114

AID/CSD-2457

A regional training course in watershed resources management and environmental monitoring was conducted to help LDC resource managers and land use planners identify relevant goals, synthesize appropriate policies, and implement proper management practices. This syllabus provides a framework for the course.

Syllabus chapter topics are as follows: (1) concepts of watershed resource management; (2) statistical methods; (3) the hydrologic cycle; (4) inventory techniques; (5) hydrologic methods; (6) vegetative management and water yield; (7) erosion processes and control; (8) water quality; (9) water harvesting; (10) reservoir management; (11) economic aspects; (12) institutional considerations; (13) modeling and simulation techniques; (14) environmental monitoring; and (15)



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watershed resources management in the multiple use concept. Special emphasis is given to major problems that concern the use of watershed lands of humid and tropical ecosystems of developing countries. A 7-page bibliography (1955-78) is included.

210

PN-AAL-837

MF \$2.16/PC \$13.00

Regional training course in natural resources management and environmental monitoring: problem manual

Ffolliott, Peter F.

University of Arizona; U.S. Agency for International Development. Bureau for Science and Technology

Oct 1981, (95p.) : En

9310114

AID/CSD-2457

To supplement the syllabus for a regional training course on watershed resources management and environmental monitoring, this manual of relevant problem sets was prepared for natural resource managers and land use planners concerned with watershed resources. By solving the problem sets provided, the user of the manual should acquire a better understanding of watershed resources management.

Part I provides problem sets on: statistical methods and inferences, including probability theory, frequency distribution, graphical frequency analysis, analytical frequency analysis, and the effects of clearcutting on annual peak discharge; the water budget; rainfall-runoff analysis, including mean basin precipitation, loss rates, hydrograph derivation and reconstruction, and soil runoff estimation; soil erosion; reservoir management; modeling; remote sensing; and decisionmaking. Part II provides the solutions to the problem sets.

211

PN-AAL-280

MF \$2.16/PC \$20.41

Fuelwood supply for Managua, Nicaragua: sustainable alternatives for the las Maderas fuelwood supply region

Park, W.; Newman, L.C.; Ford, K.

Mitre Corp.; Centro Agronomico Tropical de Investigacion y Ensenanza

May 1982, xii, 144p. : References, p.113-115, En MTR-81W285

This is a preliminary investigation of the fuelwood supply for Managua, Nicaragua, with particular emphasis on the supplies emanating from the area to the Northeast of Managua around the town of Las Maderas. The study assesses the effect of fuelwood harvesting in this area, characterizes the commercial fuelwood industry active between Las Maderas and Managua, and makes a preliminary estimate of the fuelwood supply and demand relationship between the Las Maderas region and Managua. The report includes a presentation and critique of potential sustainable alternatives for the Las Maderas fuelwood supply region, including charcoal production and alternative forestry management techniques. The report concludes with a summary of the findings and recommended actions. (Author abstract)

212

PN-AAL-288

MF \$2.16/PC \$16.38

Casuarinas, "the best firewood in the world": resources for charcoal, construction poles, windbreaks and shelterbelts and soil erosion and sand dune stabilization

Benge, Michael D.

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

Technical series, no.10, 21 Jul 1982, v.p. : En

Casuarina, a group of approximately 80 species of trees and shrubs native to the Southern Hemisphere, warrant increased recognition for their rapid growth, tolerance of extremely harsh habitats, and easy propagation, and for the high quality of the fuelwood they produce. This report presents information on the distribution, characteristics, botanical features, cultivation, and uses of casuarinas.

The report begins with a general description of casuarinas in terms of their resistance to salt, heat, and drought; their use in reclaiming polluted and abandoned land; and their rare ability to fix nitrogen from the atmosphere. Subsequent sections provide detailed information on fifteen Australian casuarina species; *Casuarina oligdon* in the highlands of Papua New Guinea; casuarinas in Florida and the Caribbean; the casuarina's actinorhizal dinitrogen-fixing process; inoculation methods for casuarina; and Australian seed sources for casuarinas. Excerpts from an upcoming National Academy of Sciences publication on casuarinas are also presented. Several sections provide references and sources of further information.

213

PN-AAL-633

MF \$1.08/PC \$5.59

Assessment of the potential for Peace Corps-USAID-host country cooperation in social forestry projects, Solomon Islands

Todd, Susan; Reynolds, David W.

U.S. Peace Corps. Office of Program Development

Jun 1981, viii, 21p. + 4 appendices : References, p. 21, En 9365519

Forestry and natural resource development goals for the Government of the Solomon Islands include environmental conservation and increased timber production. This report presents a brief overview of the institutions and activities concerning forestry and natural resource development in the Solomon Islands. The information is intended for use in developing collaborative projects between the Solomon Islands Government, the Peace Corps, and A.I.D.

An initial chapter presenting an assessment of the nation's general and forest resources is followed by chapters discussing the Government's forestry sector and the structure and major programs of its Forestry Division. Government relationships with foreign organizations both within and outside of the forestry sector, especially the Peace Corps and A.I.D., are described, and these agencies' activities, strengths, and interrelationships are elaborated upon. The Peace Corps program in the Solomon Islands is described in terms of its development philosophy, collaboration with other donors, and counterpart participation and training. A final chapter outlines the general and forestry development strategies of A.I.D.'s South Pacific

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Regional Development Office and includes a description of A.I.D.'s Accelerated Impact Program.

214 **PN-AAL-635**
MF \$1.08/PC \$10.01

Assessment of the potential for Peace Corps-USAID-host country cooperation in social forestry projects, Philippines

Todd, Susan; Reynolds, David W.
U.S. Peace Corps. Office of Program Development
Jun 1981, x, 31p. + 6 appendices : References, p.31, En 9365519

Deforestation in the Philippines is an important problem and is being exacerbated by increasing slash and burn farming in the uplands, deleterious logging practices, and growing demand for fuelwood. This report presents a brief overview of the institutions and activities concerned with forestry and natural resource development in the Philippines. The information is intended for use in developing collaborative projects between the Philippine Government, the Peace Corps, and A.I.D.

The initial chapter presents information on the Government's forestry sector institutions, especially the Bureau of Forest Development, which is discussed in terms of its history, structure, programs, and its relationships with other agencies, A.I.D., and the Peace Corps. Succeeding chapters discuss Peace Corps and A.I.D. programs in the Philippines, including their development philosophies, relations with the forestry sector, collaboration with other donors, and attitudes regarding the use of counterparts and training. A description of the Philippine Government's agro-forestry community development program is appended. Recommendations are also given for Peace Corps forestry workshops.

215 **PN-AAL-636**
MF \$1.08/PC \$7.28

Assessment of the potential for Peace Corps-USAID-host country cooperation in social forestry projects, Western Samoa

Todd, Susan; Reynolds, David W.
U.S. Peace Corps. Office of Program Development
Jun 1981, viii, 21p. + 7 appendices : References, p.21, En 9365519

Forestry and natural resource development are critical to attainment of the Government of Western Samoa's rural development goals. This report presents a brief overview of the the potential for collaboration between the Peace Corps, A.I.D., and the Western Samoan Government's social forestry projects.

Against a background description of conditions in Western Samoa, the report presents an assessment of the country's forest resources and Government forestry activities. Next, current collaborative activities and working relationships between the Government, Peace Corps, and A.I.D. are described with regard to development priorities and availability of resources. The current lack of and possibilities for independent Peace Corps forestry programs or for programs assisted through A.I.D.'s South Pacific Regional Development Office are discussed. Brief mention is also made of Peace Corps collaboration with other development agencies in the country. The

importance attributed by the Peace Corps and A.I.D. to appropriate education counterpart training is emphasized.

Appendices provide supporting data, including development plans and proposals for the Western Samoan forestry sector.

216 **PN-AAL-637**
MF \$1.08/PC \$9.10

Assessment of the potential for Peace Corps-USAID-host country cooperation in social forestry projects, Fiji

Todd, Susan; Reynolds, David W.
U.S. Peace Corps. Office of Program Development
Jun 1981, vii, 23p. + 7 appendices : References, p.23, En 9365519

Forestry and natural resource development are critical to attainment of the Government of Fiji's rural development goals. This report presents a brief overview of the institutions and activities concerned with forestry and natural resource development in Fiji. The information is intended for use in developing collaborative projects between the Fiji Government, the Peace Corps, and A.I.D.

An initial chapter presenting an assessment of general and forest resources is followed by chapters discussing the Government's forestry sector and the structure and major programs of the Department of Forestry (DOF). Government relationships with foreign collaborators, especially the Peace Corps and A.I.D., both within and outside of the forestry sector are described, and these agencies' activities, strengths, and inter-relationships are elaborated. The Peace Corps program in Fiji is described in terms of its development philosophy, collaboration with other donors, and the Peace Corps' insistence on the inclusion of counterpart participation and training. Special attention is given to A.I.D.'s Accelerated Impact Program funding of Peace Corps subprojects. A final chapter outlines the general and forestry development strategy of A.I.D.'s South Pacific Regional Development Office.

217 **PN-AAL-638**
MF \$1.08/PC \$5.98

Assessment of the potential for Peace Corps-USAID-host country cooperation in social forestry projects, Tonga

Todd, Susan; Reynolds, David W.
U.S. Peace Corps. Office of Program Development
Jun 1981, vii, 15p. + 6 appendices : References, p.15, En 9365519

Forestry and natural resource development do not have high priority among the Government of Tonga's rural development goals. This report presents a brief overview of the institutions and activities concerned with forestry and natural resource development in Tonga. The information is intended for use in developing collaborative projects between the Tongan Government, the Peace Corps, and A.I.D.

An initial chapter presenting an assessment of general and forest resources is followed by chapters discussing the Government's forestry sector and the structure and major programs of its Forestry Department. Government relationships with foreign organizations both within and outside of the forestry sector, especially the Peace Corps and A.I.D., are described,



ENVIRONMENT & NATURAL RESOURCES

and these agencies' activities, strengths, and inter-relationships are elaborated upon. The Peace Corps program in Tonga is described in terms of its development philosophy, forestry sector involvement, and collaboration with other donors. A final chapter outlines the general and forestry development strategies of A.I.D.'s South Pacific Regional Development Office as well as its three modes of operation, including the Accelerated Impact Program.

218

PN-AAL-730

MF \$1.08/PC \$5.72

Tree seed and other plant materials aspects of U.S. AID-supported reforestation projects

Greathouse, Thomas E.

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

19 Feb 1982, iv, 27p. + 3 appendices : En

DAN-1406-C-00-1091-00

While the cost of tree seed is much less than 1% of the total cost of a reforestation project, using seed which is inherently capable of producing maximum yields in a given environment is crucial in determining such a project's success or failure. This report discusses the use of tree seeds and other reproductive materials as an integral part of A.I.D. reforestation projects.

A.I.D. forestation goals are discussed and the magnitude of reforestation projects is described in terms of location, funding, quantity of trees planted, and the costs and quantities of seed. Next, factors determining the availability of tree seed or clonal material are examined, with emphasis on supply and demand; the need for long-term planning to procure the best seed; and special considerations in procuring high-risk clonal materials. Seed suppliers - commercial, government, quasi-government, exporters, and intermediaries - are briefly described, and the role of local seed production is explored. The authors proceed

to highlight project variables other than seeds, e.g., sociocultural factors and nursery conditions. Lastly, local and overseas seed procurement problems are reviewed. A series of general and technical recommendations and brief conclusions round out the paper. Appendices contain a 33-item bibliography (1974-82) and illustrative tables.

219

PN-AAL-802

MF \$1.08/PC \$4.29

Comportamiento de especies forestales de interes para lena en ensayos y plantaciones en Honduras (Behavior of forest species of interest for firewood in experimental plantings in Honduras)

Volkart, Conrado M.; Cano, Roger G.

Tropical Agricultural Research and Training Center.

Department of Renewable Natural Resources; U.S.

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

Serie tecnica: informe tecnico, no.29, 1982, iii, 26p. :

Bibliography, p.23-24, Es

5960089

Using data gathered in trials and on plantations by the Centro Agronomico Tropical de Investigacion y Ensenanza Fuelwood Project and others, the authors of this report analyze the performance of tree species planted in Honduras and of interest in firewood production. Information is provided on 18 broadleaf species planted at 18 different sites, including their classification in different ecological zones. The influence of different factors on the species' performance is discussed, and a tentative list is presented of those species performing well in the zones considered. (Author abstract, modified).



Accurate information is paramount in planning for the rational development and allocation of natural resources.



220 7 PD-AAI-865
MF \$2.16/PC \$19.11

Alternative energy resource development project; consultant report on research program for woody biomass production

Hatch, Charles R.
U.S. Agency for International Development. Bureau for Asia.
India
16 Oct 1981, : En
3860474

The role of alternative energy sources in relaxing India's dependence on expensive imported oil became an important topic in the 1970's. This report concentrates on one narrow aspect of India's alternative energy program - the production of woody biomass, especially in the non-commercial sector.

After discussing the importance of woody biomass, the authors suggest an intensive, seven-point research program to be implemented alongside existing programs at Biomass Centers in Lucknow and Madurai. The program consists of: (1) assessing existing fuelwood plantations; (2) implementing plantation field trials; (3) identifying plantation establishment relationships; (4) implementing seed procurement and maintenance procedures; (5) identifying continuous cropping nutrient cycle relationships; (6) identifying potential insect and disease impacts; and (7) conducting economic and social assessments. A specific strategy for A.I.D. implementation of this research plan is provided as is information on program implementation, control, and budgeting. Appendices include four Indian proposals for woody biomass research.

221 2 PD-AAJ-008
MF \$1.08/PC \$11.05

Alternative energy resource development project; consultant report on research program for biomass conversion

Flanigan, Virgil
U.S. Agency for International Development. Bureau for Asia.
India
2 Oct 1981, : En
3860474

On the basis of a brief review of Indian energy policies as they relate to biomass and an evaluation of demand in India's non-commercial sector for energy produced from firewood, crop residue, and animal dung, the author of this report proposes a research program for biomass conversion in India.

Four topics are emphasized. Reforestation carried out at social forestry energy plantations is given top priority. Development of producer gas pump sets powered by fuelwood or crop residue is suggested. Importance is also assigned to planning a harvesting system for maturing fuelwood plantations; maximizing the efficiency of driving the planned 1.5 megawatt power station will be investigated. Lastly, limited support will be given to development, at the Indian Institute of Technology in Delhi, of other interesting conversion processes, e.g., the steam explosion pretreatment process.

Appendices include proposed project budgets and reports on: village-level gasification of charred biomass for irrigation; producer gas-powered small horsepower utility engines; biomass gasifiers and internal combustion engines; steam delignification of lignocellulosic residues; and materials engineering of lignin/cellulose waste.

222 10 PN-AAL-224
MF \$2.16/PC \$20.67

Energy, forestry and natural resources activities in the Africa region

Reines, Sheila
U.S. Agency for International Development. Bureau for Africa
Jul 1982, ii, 152p. : En

This report describes A.I.D. projects in Africa that have been developed in response to Congressional mandates and A.I.D. policies formulated to assist developing countries in alleviating critical shortages of wood and fossil fuels and the environmental degradation which ensue from deforestation. These projects span a gamut of activities from village-scale woodlots to large commercial fuelwood plantations, from testing and developing small, pilot solar pumps to procurement and installation of equipment to strengthen a national power grid, from training in management of petroleum resources to development of institutions carrying on research in alternative energy technologies.

A.I.D. has also funded studies on the environmental status of various countries, the social impact of new technologies, petroleum use, and community participation in fuelwood surveys. These studies have been supplemented by workshops, seminars, and conferences. In sum, over 30 technologies have been brought to over 20 countries along with trained professionals capable of planning for future energy needs.

223 5 PN-AAL-279
MF \$2.16/PC \$14.95

Workshop on energy and agriculture in developing countries

National Academy of Sciences. National Research Council.
Commission on International Relations. Board on Science and Technology for International Development
(Workshop on Energy and Agriculture in Developing Countries, Airlie, VA, US, 29 Jun-1 Jul 1981)
1981, 112p. : Bibliography, p.81-108, En
9365538
DAN-5538-G-00-1023-00

Faced with rising energy costs and increasing demand for food, developing countries and donors are examining links between energy use and agriculture. This paper reports on an international workshop held to review problems in energy and agriculture in developing countries and to advise A.I.D. of potential solutions.

Two papers summarize working groups' findings on energy in agricultural production and energy in the postharvest system. The first addresses germ plasm, mechanization of agricultural production, fertilizer and biological nitrogen fixation, pest control, and water for crop production. The second report discusses transportation, energy supply objectives for post-harvest food systems, the energy and food consumption system, and reforestation.

Also included is a detailed list of conclusions and recommendations emphasizing the need to develop technologies appropriate to a wide range of environments and situations. Appended are a 238-item bibliography (1953-81) and a list of workshop participants.



ENERGY

224

8

PN-AAL-302

MF \$1.08/PC \$11.18

Application of the FLERT (fuel-linked energy resources and tasks) approach to rural household and community anaerobic digestion systems

Santerre, Michael T.; Smith, Kirk R.
East-West Center. East-West Resource Systems Institute
Energy for rural development program report, PR-80-5, Sep
1980, 79p. : Bibliography, p.75-79, En

The introduction of anaerobic digesters into rural households and communities in Asia and the Pacific has often been unsuccessful due to the failure to assess not only local energy needs and resources, but also the social and environmental appropriateness of the new technology. The Fuel-Linked Energy Resources and Tasks (FLERT) approach presented here provides a well-defined and replicative framework for examining the physical, social, and environmental resources used and the products generated by anaerobic digesters and for predicting whether digesters will or will not be appropriate in specific situations.

With limited data derived from literature review, the anaerobic digestion system is analyzed in terms of construction, operations and maintenance, management of feedstock raw materials and of residues, and energy distribution and use. Three types of digesters are included in the analysis - floating-dome, fixed-dome, and bag-type digesters. Tasks that might be promoted in rural areas by the energy and other products provided by digesters are appraised and some implications of using these products are discussed, based on actual experiences. A model for comparing condensed sets of data from alternative energy technologies is presented. A five-page bibliography (1956-80) is included.

225

5

PN-AAL-305

MF \$1.08/PC \$10.27

Criteria for evaluating small-scale rural energy technologies: the FLERT approach (fuel-linked energy resources and tasks)

Smith, Kirk R.; Santerre, Michael T.
East-West Center. East-West Resource Systems Institute
Energy for rural development program report, PR-80-4, Sep
1980, 37p. + attachment : En

Economic analyses alone do not provide sufficient information to compare small-scale energy technologies (SSET's) for application in rural areas of Asia. This paper describes a complex and highly structured analytic framework - the Fuel-Linked Energy Resources and Tasks (FLERT) approach - for evaluating and comparing SSET's in relation to specific village needs.

To provide sufficient data so that planners can balance the various social, environmental, and economic costs and benefits represented by alternative SSET's within a particular setting, the FLERT framework tabulates physical, social, and environmental resource requirements. A set of accounting rules for determining resources is provided. The FLERT framework also tabulates task categories, specifically, fuel form, fuel equivalent measures, spatial (geographic) and temporal fuel availability, and fuel co-products. Finally, a "specification plate" approach is used to distill the resource and task categories down to the most important and measurable few; a list of 23

specifications which can be applied to any SSET is provided. A 7-page bibliography is included.

226

13

PN-AAL-306

MF \$1.08/PC \$7.80

Thesaurus for energy and rural development

Pruett, Diane M.; Toyoshiba, Ted S., Jr.
East-West Center. East-West Resource Systems Institute
Energy for rural development research materials, RM-80-1,
Sep 1980, vii, 51p. : En

Faced with the lack of a standardized interdisciplinary vocabulary covering the fields of rural development and energy, the East-West Resource Systems Institute developed this hierarchically constructed subject thesaurus for use in indexing and online searching of documents in its Energy and Rural Development (ERD) collection.

The 940 authorized terms - many not included in standard thesauri - cover technological, sociological, and economic aspects of energy, energy technologies, and rural development. The thesaurus's emphasis on energy systems appropriate to rural Asia reflects the nature of the East-West Institute's ERD collection.

227

3

PN-AAL-308

MF \$1.08/PC \$4.29

Staff summary report: symposium on biomass substitutes for liquid fuels

National Academy of Sciences. National Research Council.
Commission on International Relations. Board on Science
and Technology for International Development;
Interciencia Association; Brazilian Society for Scientific
Progress; Brazil. Ministry of Industry and Commerce;
National Research Council of Brazil; Brazilian Corporation
for Agricultural Research
(Symposium on Biomass Substitutes for Liquid Fuels,
Campinas, BR, 9-12 Feb 1982)
1982, 31p. : En
9365538
DAN-5538-G-SS-1023-00

A 1982 international symposium on biomass substitutes for liquid fuels, held in Campinas, Brazil, is herein summarized. The report consists of brief summaries of working group papers presented at the symposium on production of raw materials; conversion technologies; and economic, social, and environmental issues.

Starting from Brazil's national alcohol fuels program which uses traditional resources and technologies, symposium participants charted future directions for biofuels programs based on nonfood crops and emerging technologies. Many were convinced that well-designed biomass energy programs could improve agriculture and food supplies. The need in biomass projects to increase local agricultural-sector capabilities was stressed, as was the importance of an integrated systems approach which includes strong measures to protect land and water resources. Recommended were greater attention to the use of tropical soils and soil microorganisms, breeding of new plant varieties suited to unused lands, finding ways to produce liquid fuels from wood, and determining the potential of oil-producing plants and trees.



228 *4* PN-AAL-346
MF \$2.16/PC \$22.23

Energy analysis in rural regions: studies in Indonesia, Nepal, and the Philippines

Atje, Raymond; Deepak, Bajracharya; et al.
East-West Center. East-West Resource Systems Institute
Energy for rural development program report, PR-80-2, Sep 1980, v.p. : Chapter references, En

Patterns in the use of fuelwood and related forms of energy in Indonesia, Nepal, and the Philippines are analyzed herein as an aid to future energy planning, policy, and technology development in rural southern Asia.

The West Java study describes the types, amounts, and usage of fuelwood in light of current concern for deforestation. The study of a Nepal hill village *panchayat* is set against the wider issue of fuel and food interactions as sources of pressure on the environment. The study of the Bicol project in the Philippines, part of an integrated area development planning effort, analyzes variation in fuelwood use in relation to household and village characteristics and associated structural effects. The final study reviews Nepal's ecological and socioeconomic structure and previous energy research to develop a context for designing research projects that meet regional energy needs and facilitate comparison with other research.

Among the studies' conclusions are that wood will continue to be the most important fuel for the next 5-10 years, and that variation in consumption and acquisition of fuelwood exists as the product of complex socioeconomic dynamics.

229 *4* PN-AAL-347
MF \$4.32/PC \$39.65

Case histories of energy projects for rural development

Goodman, Louis J.; Love, Ralph N.; et al.
East-West Center. East-West Resource Systems Institute
Energy for rural development program report, PR-80-8, Sep 1980, 302p. : En

In response to the need for more effective planning and management of development projects, the East West Resource Systems Institute created a new conceptual framework for planning development projects and a curriculum for training project managers called Integrated Project Planning and Management Cycle (IPPMC). This is a dynamic approach to management which examines the entire range of a project's activities, from policy formulation through completion, as an integrated process. This report analyzes project planning from the standpoint of rural energy projects.

The introduction provides brief background material on the concept and applications of biomass energy projects and small hydroelectric projects for rural development. It ends with a discussion of the IPPMC and its four phases: planning, appraisal, and design; selection, approval, and activation; operation, control, and handover; and evaluation and refinement. The next section analyzes and evaluates each of five case histories in respect to policy and research issues. The five are: biomass projects in the Philippines and Fiji, a pilot plant study, and hydroelectric projects in China and New Zealand.

230 *1* PN-AAL-402
MF \$3.24/PC \$31.20

Pre-test for managing energy and resource efficient cities: state-of-the-art-review

U.S. Agency for International Development. Bureau for Science and Technology. Office of Urban Development; Coopers and Lybrand Association, Ltd.
Feb 1982, (162p.) + 6 appendices : En
9361406
PDC-1406-I-00-1050

Elaborated upon in this state-of-the art review are the many ways in which intermediate-sized cities (i.e., cities with populations of 75,000 - 250,000) in developing countries can conserve energy and other resources. The reports is intended for use as a field guide for developing country officials.

The six chapters discuss, in turn: (1) land use planning; (2) transportation; (3) energy and electric power systems; (4) water and sewer systems; (5) solid waste management; and (6) building design and materials. Each chapter contains a general discussion of the topic, a review of the tools utilized to solve resource conservation problems, and a summary of case studies applicable to intermediate-sized cities in developing countries. The authors note that the six subjects are systematically linked together. A 42-page annotated bibliography concludes the report.

231 *16* PN-AAL-768
MF \$3.24/PC \$36.92

Direct combustion systems to produce power from biomass from wood, forest and agricultural crop residue

Pingrey, Donald W.; Waggoner, Norman E.; et al.
Nor' West-Pacific Corp.; U.S. Department of Agriculture. Forest Service; U.S. Agency for International Development. Bureau for Science and Technology. Office of Forestry, Environment and Natural Resources
May 1981, v.p. : Bibliography, 7-1 - 7-5, En
USDA contract no. 53-319R-0-135
9365709
AG/STR-4709-6-79

As an aid to energy planners in the developing world, this report provides a comprehensive state of the art summary of direct combustion systems for utilizing biomass residues. "Off-the-shelf" conventional direct combustion systems are identified, their applications are discussed, and constraints to their use in developing countries are evaluated. Attention is given both to the systems' economic viability and their potential environmental impacts.

Principles of biomass combustion are explained, and tables of biomass fuel analyses and sample combustion calculations are given. Handling and processing of biomass materials, including drying to aid combustion, are discussed. The advantages and disadvantages of biomass-fueled electric power plants are analyzed as are the costs associated with a typical 16 megawatt electric biomass-fueled plant producing 50% cogenerated steam.

The appendix lists names and addresses of vendors of combustion systems and equipment needed to handle biomass materials. A 10-page bibliography is included. (Author abstract, modified.)



ENERGY

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3

PN-AAL-935

MF \$1.08/PC \$7.41

Assessing alternative resources, technologies, and organizational means for meeting rural energy needs

Morse, Richard; Fesharaki, Fereidun
East-West Center. East-West Resource Systems Institute
Energy for rural development program report, PR-80-1, Sep
1980, 54p. : References, p.51-54, En

The Energy for Rural Development (ERD) Program aims at assessing the alternative resources, innovative technologies, and organizational and policy means needed to meet the energy needs of developing country rural people. The first in a

series of reports summarizing current findings of the ERD Program is herein presented.

A discussion of major rural energy issues – the impact of energy shortages on food supply, land and water constraints, variation in energy use and availability, user priorities and choice, and energy valuation, price, and exchange – supports an initial conclusion on the importance of the ERD's needs-based energy policy research. An assessment of rural energy resource, supply, and investment strategies focuses on the middle petroleum distillates, especially kerosene and diesel oil, in terms of cost, the world petroleum trade, and current trends in ERD countries. Short-, medium-, and long-term strategies to meet current problems are suggested.

The final section proposes policies and organizational guidelines to foster local development of renewable energy resources and technologies; the value of the FLERT approach, which assesses technologies in terms of social, environmental, and physical – in addition to price – criteria, is highlighted. Appendices include a discussion of cropping system taxonomies as a framework for rural energy analysis and a 49-item (1916-80) list of references.



A.I.D. has funded several alternative energy projects in Africa. Here, workers in Burundi cut and spread peat sods.



233

16

PN-AAL-001

MF \$1.08/PC \$12.48

Project impact: a low-cost alternative for universal primary education in the Philippines

Wooten, John; Jansen, William; Warren, Marion Kohashi
U.S. Agency for International Development. Bureau for Program and Policy Coordination. Office of Evaluation
A.I.D. project impact evaluation report, no.38, Sep 1982, xv, 20p. + 7 appendices : En

Project IMPACT (Instructional Management by Parents, Community, and Teachers) was implemented in the Philippines to test an approach to primary education which would sharply reduce costs per student without loss of educational quality. Canada's International Development Research Center funded the project, which was developed by the Center for Innovation and Technology, a branch of the Southeast Asian Ministers of Education Organization. A.I.D.'s evaluation of the project, based on a review of records and interviews with parents, teachers, and IMPACT officials, is here presented.

Under the project, 100 or more primary school students, divided into groups of 5-10, were taught by intermediate (grades 4-6) primary school students using programmed teaching modules under the supervision of professional teachers. Parents and skilled workers served as community resource persons, and a local primary or high school graduate provided clerical, administrative, and logistic support.

Cost-effectiveness studies and academic performance tests indicate that the project achieved its objective. An added benefit was the greater poise and personal initiative evinced by IMPACT students over their conventional counterparts, possibly as a result of IMPACT's stress on independent study and peer group interaction. Unfortunately, initial project savings were not used to maintain qualitative levels in subsequent years (e.g., by replacing texts and equipment and repairing school buildings), resulting in declining professional support for IMPACT. Parents viewed IMPACT as benefiting the brightest students, but as less successful with average students.

It is recommended that the Minister of Education and Culture (MEC) assess the first few years' implementation as a basis for a policy decision on IMPACT. If the result is positive, support should be arranged for the IMPACT schools' unmet needs, preferably using MEC budgetary resources. Regional directors should be encouraged to be more resourceful in implementing this unique education delivery system. Appendices include tables relating cost and academic achievement in IMPACT and conventional schools and a 17-item bibliography (1973-1981).

234

10

PN-AAL-399

MF \$2.16/PC \$13.65

Bridging the gap: a participatory approach to health and nutrition education

Save the Children Federation; U.S. Agency for International Development. Bureau for Science and Technology. Office of Nutrition
May 1982, 103p. : En

Many nutrition programs in developing countries include demonstrations, hands-on experience, and nonformal education to increase participant's understanding of nutritional needs and to develop their commitment to finding solutions.

This illustrated manual, based on work by Save the Children in Indonesia and the Dominican Republic, describes tech-

niques and materials used to train field staff and supervisors for this type of education. Guidelines for 38 workshops and activities for training community health and nutrition workers are described; materials are listed and procedures are defined. Communities are helped to uncover health and nutrition problems by sensitizing community workers, awakening community awareness, and exploring nutrition problems. Materials for creating learning activities are described, as are methods for involving the community in planning and evaluating village learning experiences.

Key principles include planning workshops for maximum flexibility; sensitizing trainees to messages from local people; knowing the exact functions and potential impact of different educational materials and methods; and helping learners to translate their insights and ideas into practical action and to assess the results.

235

4

PN-AAM-033

MF \$3.24/PC \$33.15

Qualitative assessment of selected regional training institutions in West and Central Africa

Wise, Cynthia; Dieterich, Robert
African-American Institute; U.S. Agency for International Development. Bureau for Africa. Regional Economic Development Services Office. West Africa
1981, 247p. : En
REDSO/WA 79-160

A variety of existing African institutions could be developed for use by A.I.D. in third-country training efforts according to this qualitative assessment of the regional training capabilities of 61 regional and national training institutions in West and Central Africa.

An introductory sections discuss an earlier inventory of African training institutions and the present assessment's objectives, organization, and methodology. Demographic trends in education are then outlined and general conclusions about the training capabilities of the sampled institutions presented.

Next, the general background, major programs, student population, admissions criteria, curricula strengths, faculty, institutional infrastructure, and financial and budgetary status of 15 institutions are described and recommendations are made for improving their training capabilities. The history of and trends in A.I.D. support of participant training programs in Africa are then reviewed. Appended are copies of the questionnaires used and a list of institutions visited in conducting the assessment. A final overview notes the shortage of residential and language training facilities, the limited availability of graduate training opportunities, and the absence of preparatory or remedial courses as major constraints to regional training activities.



EDUCATION

236

5

PN-AAM-178

MF \$4.32/PC \$40.95

Evaluation of the formal education system in relation to development objectives

Checchi and Co.; Berger (Louis) International, Inc.; Action Programs International; Mauritania. Ministry of Economy and Finance. Directorate of Studies and Programming; U.S. Agency for International Development. Bureau for Africa. Mauritania

1980, xii, 243p. + 46 appendices : En Report no.FS-3-2

French edition: PN-AAM-140

6820211

AID/afr-C-1489

This assessment finds that serious deficiencies in almost all aspects of Mauritania's educational system render it incapable of meeting the nation's education and training needs.

To provide a framework for analyzing the educational system, the paper first outlines the three national economic and social development plans implemented since 1963. Next, the organizational and administrative structures of the public and private educational systems are examined. A detailed analysis of the educational system by level and type of education - which includes data on program structures, student enrollments, teaching staffs, and educational financing and budgets - is then presented. A final section presents conclusions regarding elementary, secondary, vocational and technical, pedagogical, and higher education. The text is highlighted by 85 tables, and 55 appendices list data on such topics as student/classroom-teacher ratios, educational budgets, national economic and social development plans, and enrollment by region and sex.

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5

PN-AAM-187

MF \$1.08/PC \$7.67

Education as a development tool

Checchi and Co.; Berger (Louis) International, Inc.; Action Programs International; Mauritania. Ministry of Economy and Finance. Directorate of Studies and Programming; U.S. Agency for International Development. Bureau for Africa. Mauritania

Mar 1981, 56p. + 2 annexes : En Report no.PI-2

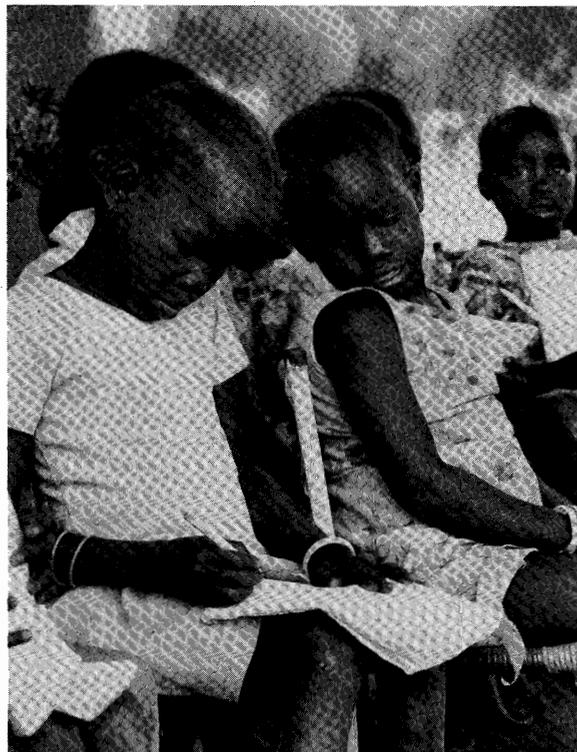
French edition: PN-AAM-159

6820211

AID/afr-C-1489

Mauritania's educational system, with its focus on the urban elite and modern industry, has left the rural masses without the benefits of development and has led to the decline of rural communities. To help redress this situation, this report outlines an educational strategy that is aimed at all segments of the population, embraces both formal and non-formal elements, and is directed at both national and local development.

An initial section treats the objectives and content of basic education. Emphasis is placed on functional literacy and acquiring the knowledge needed for productive work and access to higher education and on replacing a curriculum glorifying Western society, urban life, and non-manual labor by one stressing the importance of rural development and awareness of the rural condition. Succeeding sections are devoted to reforming secondary, professional, and higher education, and teacher training. The role to be played by educational institutions at every level is delineated, as are means for integrating the entire educational system. Appended are charts in English and French describing the proposed educational structure.



Educational development should emphasize functional literacy.



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4

PN-AAL-114
MF \$1.08/PC \$7.41

Introduction a l'histoire des Wodaabe du Niger (Introduction to the history of the Wodaabe)

Maliki, Angelo B.

Niger. Ministry of Rural Development; U.S. Agency for International Development. Bureau for Africa. Niger *Rapport pre'liminaire - discussion paper, no.3*, Mar 1982, 56p. : Fr 6830202

Contrary to the popular impression that the Wodaabe arrived at their present Nigerien home as the result of irrational and chaotic migrations, this study reveals that each movement was based on a need to confront precise political, social, and physical threats to their survival as a tribe.

Migration, whether urgent and rapid or more gradual, was especially important during the extremely unstable period in the Sudan at the end of the nineteenth century. A wide array of changes in social structures and interrelationships with surrounding and invading peoples left migration to ever more marginal lands as the only alternative for the Wodaabe's survival. As the tribe moved in various waves into Niger, internal tribal organization was forced to change in order to adapt to constantly changing environments and new subsistence patterns and as part of the process of Islamization. The ancestral family deferred its tribal organizing role to Islamic laws of organization and identity. Today, Wodaabe tribal structure and functions are a conglomeration of adapted patterns which is still in flux.

239

6

PN-AAL-639
MF \$1.08/PC \$10.01

Liberian crisis and an appropriate U.S. response

Berg (Elliott) Associates; U.S. Agency for International Development. Bureau for Africa. Liberia

Feb 1982, : En

6980135

AFR-0135-C-00-1091-00

Although Liberia is a resource-rich country, it is currently facing a severe short-to medium-term economic crisis. This paper analyzes Liberia's economic problems, examines the ability of the Liberian Government to respond to these problems, and then outlines an appropriate U.S. assistance program.

The crisis is a result of an intractable budget deficit, caused by high spending in the recent past and compounded by serious foreign exchange problems and a stagnant economy. While the Government has tried to control expenditures, improvement is difficult to achieve due to the Government's limited financial control and fiscal flexibility and its inexperienced political leadership.

The authors suggest that to help Liberia achieve fiscal equilibrium, use public resources more effectively, and raise the income of its poor, a three-pronged program is necessary: (1) budget support, tied to development spending and policy reform; (2) training and technical assistance in economic management; and (3) a reassessment of rural development approaches, with attention to road construction and maintenance, primary education, and possibly health care, and an expansion of the sites and service housing project in Monrovia.

Included are responses to two USAID/L critiques of the draft version of this paper.

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8

PN-AAM-174
MF \$2.16/PC \$17.03

Sociological profile: the Moors

Checchi and Co.; Berger (Louis) International, Inc.; Action Programs International; Mauritania. Ministry of Economy and Finance. Directorate of Studies and Programming; U.S. Agency for International Development. Bureau for Africa. Mauritania

Feb 1980, 129p. : Bibliography p.120-129, En Report no.AS-7-2

French edition: PN-AAM-132

6820211

AID/afr-C-1489

The Moorish population in Mauritania has historically played a significant role in the nation's economic and social development. This paper reports on a study undertaken to determine factors in past and present Moorish society which have created obstacles to development.

The authors first present a historical overview of Moorish society from prehistoric times to the present. The second part of the paper provides information on production, consumption, and distribution patterns in the Moorish economy, and discusses Moorish social organization in terms of kinship, power, and social stratification. The authors conclude that the replacement of traditional modes of production by modes associated with a market economy has drastically altered the Moors' nomadic lifestyle, disrupting patterns of employment, nutrition, hygiene, housing, and marriage. These economic and social dislocations (especially the growing power of sedentary farming groups) and the catastrophic climatic conditions of the last decade are held responsible for Mauritania's current state of underdevelopment. Appended is a 104-item (1728-1979) bibliography.

241

1

PN-AAM-200
MF \$1.08/PC \$4.81

Social dimensions of Egyptian irrigation patterns

Knop, Edward C.; Sallam, Mohamed S.; et al. Colorado State University; Consortium for International Development; Egypt. Ministry of Irrigation. Water Distribution Research Institute. Water Research Center *Egypt water use and management project: technical report, no.26*, Sep 1982, ix, 26p. : En

2630017

AID/NE-C-1351

Irrigation practices depend not only on physical conditions, but also on the socioeconomic patterns which influence farmers' lives. The Egypt Water Use and Management project team examined 28 sociological factors which could potentially influence farmers' irrigation behavior. Eleven of these factors showed significant statistical correlation with one or more of the 5 irrigation practices selected for study. The sociological factors were divided into background factors which could account for irrigation behavior in a general way, and situational factors which are related to types of behavior in particular sets of circumstances. Situational factors were found to have more



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significant correlations with irrigation behavior than background factors. Situational factors could also provide researchers with explanations for irrigation behavior. The study showed that a definite correlation exists between sociological factors and irrigation practices. (Author abstract, modified)

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PN-AAM-202

MF \$1.08/PC \$3.77

Role of rural sociologists in an interdisciplinary action oriented project: an Egyptian case study

Layton, James J.; Sallam, Mohamed S.

Colorado State University. Engineering Research Center;

Consortium for International Development; Egypt. Ministry of Irrigation. Water Distribution Research Institute. Water Research Center

Egypt water use and management project: technical report, no. 13, Sep 1982, v, 28p. : En

2630017

AID/NE-C-1351

Rural sociologists involved in an action-oriented interdisciplinary project perform a variety of roles. This paper examines how rural sociologists working in an on-farm water management project in Egypt execute their tasks by fulfilling the roles of analyst, advisor, and innovator. Such roles are performed in two distinct contexts which exist at the same time, an interdisciplinary context and a cross-cultural context. The project sociologists also have to coordinate their efforts with agronomists, economists, and engineers who are solving specific problems and implementing specific projects. In addition, the sociologists must direct their efforts to both Americans and Egyptians who are working together. The manner in which the sociologists function as team members in performing these different roles as well as the relevance of the roles to the project and the sociologists are analyzed. (Author abstract, modified)



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0

PN-AAL-282
MF \$1.08/PC \$9.23

Evaluation of light aircraft remote sensing techniques for the detection and quantification of cane rust

Schultink, Ger; Karteris, Michael A.; Safir, Gene R.
U.S. Department of Agriculture; Michigan State University.
Department of Botany and Plant Pathology; U.S. Agency for International Development. Bureau for Development Support
CRIES working series, Jan 1980, vi, 60p. : References, p.58-60, En
PA/AG/TAB-236-14-76
9310236

The importance of sugar as an agricultural product in the Dominican Republic makes early detection of sugar cane rust fungus essential. This report describes a test of small format (70mm) color infrared aerial photography in locating and evaluating the severity of sugar cane rust in a test site northeast of Santo Domingo.

Color infrared photographs were taken at three different altitudes with a Hasselblad 500 EL/M camera with an 80mm focal length lens and were interpreted using a five-level classification system to estimate infestation levels based on stage of growth and tonal rendition; a similar system classified the ground truth observations made in the test area. The highest correlation (89%) between interpreted infestation levels and ground truth data was obtained for the largest scale imagery (approximately 1:1,000); correlations ranged from 91% to 96% for all combinations. At the same time, multi-band photographs were taken using a NAC model MB-470 camera.

The study indicates that both color infrared and multi-band light aircraft remote sensing techniques can provide reliable information on the status and geographic extent of infested sugar cane crops.

244

9

PN-AAL-303
MF \$1.08/PC \$9.1

Solar icemakers for rural development: technical prospects

Isaak, David T.
East-West Center. East-West Resource Systems Institute
Energy for rural development program report, PR-80-7, Sep 1980, 21p. : Bibliography, attached, En

Solar icemaking is a logical technology for developing countries. If solar radiation is harnessed for cooling purposes, the peak supply of useful energy will generally coincide with peak demand for refrigeration, while the use of the solar cooling effect to produce ice will provide energy storage during low radiation periods.

This report provides a brief history of refrigeration and an explanation of refrigeration principles (mechanical compression and intermittent vapor absorption cycles). Refrigerant/absorbent combinations are described, as are the basic designs and operation of solar refrigerators (Trombe-Foex, Chinnappa, Exell). Performance of selected icemakers is assessed and compared, and economic considerations in solar refrigeration are reviewed.

Further research is recommended on unusual refrigerant/absorbent combinations, on operation of ice makers in various climates, on new materials and the capital-intensive-

ness of present designs, and on the social and economic aspects of local ice manufacture. A 42-item bibliography (1930-1980) is appended.

245

6

PN-AAL-304
MF \$1.08/PC \$9.49

Bibliography on anaerobic digestion

Ramakrishna, Jamuna
East-West Center. East-West Resource Systems Institute
Energy for rural development research materials, MRM-80-4, Sep 1980, 67p. : En

The priority assigned to biogas systems by participants in A.I.D.'s Energy for Rural Development Program spurred the compilation of this 373-item bibliography on anaerobic digestion. The materials focus on energy technologies that are especially suited to the social, economic, and institutional concerns of rural Asia and the Pacific.

Entries are presented in two sections. The first presents largely non-technical reports on anaerobic digesters in South and Southeast Asia, for the years 1956-80, with emphasis on the period 1970-80. The second section, which includes both technical and non-technical references, is a condensation of a computerized search of the U.S. Department of Energy's Energy Research Abstracts published during the period 1977-80.

The search revealed a lack of reliable data, pointing to the need for further research on the technology and potential of anaerobic digestion.

246

2

PN-AAL-371
MF \$1.08/PC \$9.75

Selection of alternatives to gravity flow systems for rural communities: a workshop to train Guatemalan engineers in pumping technologies

Edwards, Daniel B.
U.S. Agency for International Development. Bureau for Science and Technology. Office of Health; Camp Dresser and McKee, Inc.
WASH field report, no.56, Sep 1982, viii, 64p. : En, Es
9311176
AID/DSPE-C-0080

Many rural lowland communities in Guatemala are unable to use gravity flow water supply systems. To fill the growing need for alternative systems, a 4-week training workshop in pumping technology for small community water supply systems was held for 10 Guatemalan engineers.

The workshop, which provided a rare training opportunity for public sector engineers, established a model for transferring both training and engineering technologies to agency needs throughout the developing world. A complete instructor's manual (in Spanish) and a student/instructor reference manual (mostly in Spanish) were developed. Four types of pumping system were covered in the workshop: centrifugal pumps with horizontal and vertical axial mounting driven by either electric or internal combustion motors; hydro-rams; and windmills. Engineers capable of selecting and installing the appropriate system are now available in four local agencies. Recommendations for follow-on projects are provided.



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247

PN-AAL-657

MF \$2.16/PC \$25.48

Improving the operational efficiency of public industrial enterprise in Egypt; executive summary

Jones, Leroy P.

Boston University; U.S. Agency for International Development. Bureau for Near East. Egypt

Industrial sector strategy assessment, Sep 1981, v.p. : En

Public enterprises in Egypt account for more than 69% of total manufacturing and 91% of manufacturing involving 25 workers or more. This paper discusses measures to increase the efficiency of Egypt's public sector, with emphasis on manufacturing and better use of existing resources.

Following an overview on the evolution, size, and structure of the public enterprise sector, especially industry, the authors discuss the importance of improving efficiency and examine the existing level of efficiency. Subsequent chapters consider a proposed organizational reform of the public enterprise sector, the "signaling system", and other strategies to realize potential efficiency gains. The "signaling system", which refers to the way in which enterprises are guided to act in the interest of society as a whole, consists of performance evaluation, performance information, and incentive systems.

The authors conclude that while there is a great potential for increasing efficiency, simple legal and organizational reforms are not enough. A package of reforms which would give managers greater autonomy and provide correct signals to decision-makers at all levels is advocated. Appended is a 69-item bibliography (1965-81).

248

PN-AAL-658

MF \$1.08/PC \$10.92

Private sector industrial development strategy

Clark, Paul G.

Boston University; U.S. Agency for International Development. Bureau for Near East. Egypt

Industrial sector strategy assessment, Dec 1981, vi, 76p. : En

Private sector expansion has been a key feature of Egypt's economy since a strategy for private sector industrial development was adopted in 1973 through Egyptian Law 43. With the aid of data obtained from a survey of 46 private companies and 14 banks, this report reviews the economic impacts and policy implications of the Law 43 development strategy.

The report first reviews the experience of private companies, both those formed under Law 43 and others, and notes the private sector's growing share of production. Proposals for further stimulating private sector growth are listed. The second part of the paper examines the role of industrial exports in private sector development and profiles the export capabilities of the surveyed companies. Export trends and current and future industrial export policies are also discussed. A final section treats industrial financing for private sector development, the structure of financial institutions, private sector financing needs, and financing policies for the 1980's. Each section concludes with a consideration of the possible contributions of external donors to the development strategy. Ten tables of statistics are attached.

249

PN-AAL-767

MF \$2.16/PC \$16.12

Assessment of large scale biomass gasification systems for less developed countries

Baker, E.G.; Mitchell, D.H.; Williford, J.F.

U.S. Department of Agriculture. Forest Service; U.S. Agency for International Development. Bureau for Science and Technology. Office of Forestry, Environment and Natural Resources; Battelle Pacific Northwest Laboratories

Sep 1980, xiii, 104p. + attachments : References, attached, En

USDA contract no. 231110472

9365709

AG/STR-4709-6-79

This state-of-the-art report evaluates large-scale biomass gasification systems both economically and technically and analyses their potential applications in developing countries.

After a discussion of biomass feedstock types, handling, and preparation, the authors describe various types of gasifiers available (fixed bed updraft and downdraft, fluid bed, and entrained bed) and their current applications. Gasification chemistry, advanced gasification systems, and gas cleaning are also considered. Next, the use of fuel gas from biomass for steam power production, other fired equipment, internal combustion engines for power production, gas turbine cycles, synthesis of methanol and other liquid fuels, and synthesis of ammonia and other chemicals, is discussed. The environmental impacts of biomass gasification are reviewed.

The authors conclude that availability of sufficient feed materials is essential for large-scale biomass gasification in developing countries. The most promising applications are: (1) rural electrification using air-blown biomass gasifiers and diesel generators; (2) retrofitting existing oil and gas fired equipment in various industries, particularly in agricultural processing plants; and (3) producing ammonia-based fertilizers from biomass-derived synthesis gas. A 90-item bibliography (1932-80) and a list of gasifier manufacturers are appended.

250

PN-AAL-858

MF \$3.24/PC \$34.32

Priorities in biotechnology research for international development: proceedings of a workshop

National Academy of Sciences. National Research Council.

Commission on International Relations. Board on Science and Technology for International Development; U.S.

Agency for International Development. Bureau for Science and Technology

(Priorities in Biotechnology Research for International Development Workshop, Washington, DC, US, 26-30 Jul 1982)

1982, viii, 261p. : En

DAN-5538-G-SS-1023-00

Recent developments in biotechnological research are likely to have a major impact in developing countries on economic activities involving food, chemistry, pharmaceuticals, energy, and the environment. This report presents proceedings of an international conference held to assess biotechnology's implications for A.I.D. programs.



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Opening remarks and keynote addresses focus on priorities in and Third World perspectives on biotechnology. Presented next are reports of working groups on the subjects of vaccines, animal production, monoclonal antibodies, energy, biological nitrogen fixation, and plant cell and tissue culture. Each report describes problems in developing countries that might be

solved by specific biotechnologies. Research priorities and institutional arrangements for undertaking such research are also discussed. Five background papers present further data on the above topics; each includes extensive references. A detailed list of priorities for A.I.D. funding of biotechnological research is included. Appended is a list of conference participants.



In Egypt, private enterprises account for more than 60% of total manufacturing.

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(Continued from inside front cover)

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Prospects

Since its inception, the field of development administration has been characterized by a constant evolution of ideas and strategies which have increased the effectiveness of development assistance programs in improving the lives of millions of poor majority beneficiaries. The current emphasis on decentralization and participation is both the rich harvest of past experience and the seed from which even more fruitful development may flower.

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