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A.I.D. RESEARCH AND DEVELOPMENT ABSTRACTS



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SUBJECTS AND DOCUMENTS OF SPECIAL INTEREST IN THIS ISSUE

Special topics covered in this issue:

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2. Energy: 090
3. Nitrogen fixation: 021, 022, 023, 024
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5. Women in development: 079, 083, 084

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1. Farm irrigation studies in Pakistan: 041-046
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3. Health care in Haiti: 076, 077, 078, 080, 081
4. International Conference on Women and Food: 083, 084

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SAMPLE DOCUMENT CITATION AND ABSTRACT

Item Number & Title	<p>[(171) WHEAT X RYE EQUALS TRITICALE Wolff, Tony]</p>	Author(s)
Document Date & Number of Pages	<p>[1976, 15p. CIMMYT (AID/ta-G-1083 GTS)]</p>	Issuing Office & Contract/Grant Number or Symbol
Series Note	<p>[In CIMMYT today, no. 5]</p>	
Abstract	<p>Triticale, a new crop bred at CIMMYT, is a cross between wheat and rye. It is the first successful "man-made" cereal grain. It is more than a biological curiosity. For the tropics and subtropics, it offers promise of yields and other characteristics equal to those of wheat, combined with tolerance for drought and poor soil and the resistance to disease typical of rye. The success of triticales encourages the hope that other such intergeneric "wide crosses" will soon follow. Triticale has demonstrated an adaptation to acidic, low pH soils in several areas of the world. Such conditions exist in Colombia, Ethiopia, Northern India, and Brazil. In each of these countries triticales have shown yield performance superior to wheat. The resistance of triticales to bunts and loose smut at higher elevations is an advantage for the crop. Its greater resistance to <i>Septoria tritici</i> is an added advantage in areas where this disease is prevalent—Brazil, Argentina, Ethiopia, and the Mediterranean region. In Kenya and some other locations, triticales has outyielded wheat under drought conditions. Experts expect that in fifteen years triticales will be competing seriously with the bread wheats as one of the world's most important food crops.</p>	
Publication Number	<p>[PN-AAD-154</p>	<p>Paper copy \$2.00 Microfiche \$1.00] — Prices</p>

(Related titles in a series are frequently listed below the citation.)

When completing order forms at the rear of this issue, be certain to use the Publication Number.

RURAL DEVELOPMENT

(001) TEN DECADES OF RURAL DEVELOPMENT LESSONS IN INDIA

Khan, A.H.
1978, 55p.

Mich. State (AID/ta-G-1301)

(MSU rural development paper no. 1)

Surveys the historical and ideological aspects of rural development in India during the last century. The paper begins with a brief analysis of colonial rule and suggests reasons for its downfall. Four rural problems which became particularly serious at the end of the 19th century and continued well into the 20th are next outlined: famine, abuse of land tenure, peasant debts, and rural disaffection. An analysis of the major responses to these problems follows: the colonial government's rural reconstruction effort, Gandhian utopianism, Fabian socialism, and the rural socialism practiced in Russia and China are considered. The effect of World War II on Indian rural development is briefly discussed. The paper subsequently traces the history of American agricultural assistance to India through the green revolution of the 1960's, focusing in particular on the Community Development and Agricultural Extension programs. Cooperatives during and after colonial rule are discussed, as is the history of reform in land use, administration and education. The paper also summarizes special agricultural products in India since the colonial era, and closes with an assessment of the present status of Indian rural development and the current policy directives and problems of American advisors in India.

PN-AAG-152

Paper copy \$6.88
Microfiche \$1.00

(002) AGRICULTURAL SECTOR PROGRAM IDENTIFICATION AND CLASSIFICATION (ASPIC)

AID/DS/AGR/ESPD
1979, 354p.

AID/DS/AGR/ESPD

Identifies and classifies existing and planned AID agricultural activities and agricultural development assistance priorities, as expressed by USAID missions in the Near East, Asia, Africa, and Latin America regions. This report contains matrices representing a two-way classification system by country and functional subject area activities; tables presenting information from the matrices, by country; and Country Development Strategy Statements (CDSS), focusing on USAID-identified agricultural priorities, through FY 1985. Methodology for developing the classification system and designing the data retrieval and classification procedure, are explained. A user guide to the matrices is included. Appendices contain a list of project information sources; technical codes and list of key-words used for computerized retrieval; a global overview of AID's agricultural development assistance by region and functional subject areas for FY 1976-FY 1985.

PN-AAG-528

Paper copy \$44.25
Microfiche \$4.00

(003) ADMINISTRATIVE PROBLEMS AND INTEGRATED RURAL DEVELOPMENT

Siffin, W.J.
1979, 19p.

MUCIA (AID/csd-2958 211 (d))

Cites the administrative difficulties in integrated rural development. Focuses on crucial problems of institutional, strategic, and operational nature in moving from visions and concerns towards action. Suggests these problems are only partly

responsive to the applications of technology and formal authority, and are difficult to anticipate. Sees the impact of hard and unconventional scrutiny as possibly dampening the hopes and eroding the enthusiasm of the rural people involved. Outlines how administrative problems of integrated rural development must be treated by laying out issues and tendering possible solutions. Uses the U.S. Department of Commerce's Economic Development Administration project in Oakland, California as a case study in demonstrating reasons for failure in integrated rural development. Author suggests that solutions applied in Appalachia could not be used successfully in Oakland, and blames Federal government for pressuring Oakland managers to commit funds too quickly.

PN-AAG-553

Paper copy \$2.38
Microfiche \$1.00

(004) DEVELOPMENT ACTIVITIES AND RURAL—URBAN MIGRATION: IS IT POSSIBLE TO KEEP THEM DOWN ON THE FARM?

Rhoda, R.E.
1979, 88p.

AID/DS/UD (AID/ots-147-79-25)

Reviews rural-urban migration literature and examines nine different development activities in rural areas, as well as international agency development projects and their impacts on such migration. Contains discussions of migration literature such as theoretical models and empirical studies; agricultural development activities including land reform, green revolution, agricultural mechanization, agricultural services; off-farm employment; development of rural social services; development projects of international agencies; and conclusions and implications for development activities, project assessment and analysis, and future research. Includes tables summarizing implications of empirical studies and specific development activities for rural-urban migration. Lists over 100 bibliographical references.

PN-AAG-673

Paper copy \$11.00
Microfiche \$1.00

AGRICULTURAL DEVELOPMENT

(005) PROFILES OF POVERTY IN BANGLADESH; A PRELIMINARY REPORT

Jansen, W.H.
1978, 74p.

AID/ASIA/USAID/Bangladesh

Contains interviews, in narrative form, with members of families whose economic circumstances fall below recognized national standards of poverty in Bangladesh. These are the first in a series of case studies intended to supplement and to complement the macro-oriented, primarily quantitative data already available. The informants are from families which own two acres of farm land or less and which derive some income from agriculture. Topics covered in the interviews are: land/landlessness, agricultural production and employment, marriage and reproduction, health and education, formal and informal economics, and orientation and world view.

PN-AAG-363

Paper copy \$9.25
Microfiche \$1.00

AGRICULTURE

(006) A REVIEW OF THE FARM LOAN REPAYMENT PROBLEMS IN LOW INCOME COUNTRIES

Boakye-Dankwa, Kojo
1979, 23p.

Ohio State (AID/ta-G-1331)

(In Economics and sociology occasional paper no. 582)

Reviews the magnitude, causes, and effects of the farm loan repayment problem in low-income countries (LICs). Focuses on the rapid expansion of financial services and credit in many LICs in Africa, Asia, and Latin America. Includes discussions of the magnitude and incidence of default among large vs. small farmers; causes of non-repayment of farm loans as viewed from the borrowers' side (availability of technology, borrowers' attitudes) and the lenders' side (loan processing, repayment arrangements, payment records, credit allocation, farmer education, sanctions); impact of interest rates on default; and effects of non-repayment of loans on lenders' viability.

PN-AAG-365

Paper copy \$2.88
Microfiche \$1.00

(007) PRESENT PROBLEMS OF AGRICULTURE AND AGRICULTURAL POLICIES IN JAPAN

Oswada, Keiki
1977, 32p.

Wis. (AID/csd-2263 211 (d))

Discusses current status of agricultural production, policy and administration in Japan as well as the major problems facing Japanese agriculture. Describes the policies executed under the Agricultural Basic Law and the interaction of agricultural change and growth with a generally high overall economic growth rate since 1961. The most detailed section of the paper examines current (1977) agricultural budget and administrative structure; (2) establishment of high efficiency agriculture with farm land and management improvement plans; (3) expansion of agricultural production; (4) price stabilization and improvement in marketing of agricultural products; and (5) welfare of farmers as represented by various agricultural financing mechanisms. Small-scale and part-time farming have contributed to a recent stagnation in agricultural production and the author makes policy recommendations which address these features.

PN-AAG-371

Paper copy \$4.00
Microfiche \$1.00

(008) AGRICULTURAL EVOLUTION IN JAVA: THE DECLINE OF SHARED POVERTY AND INVOLUTION

Collier, W.L.
1977, 40p.

Wis. (AID/csd-2263 211(d))

Examines and evaluates the concept of agricultural involution in the structure of rural society, particularly as it applies to Java. Using recent evidence on the character of agricultural change in rural Java, the author questions the validity of the concept in explaining and understanding events of the 1960's and 1970's. Involution implies that over a long period of time, wet-rice cultivation could absorb additional labor without reducing percapita income. This concept was later extended to various other activities and regions in Java. Critics of this definition mention that farmers' non-agricultural income, regional differences in social and economic structure, and a longitudinal perspective are not considered. Shared poverty at the consumption and distribution levels of analysis is thought analogous to involution at the production level. However, critical shortcomings in this theory result from the failure to consider unequal ownership and control of land and the nature of social relations in Java. Two harvesting

methods (bawon and tebasan) are described as they relate to labor use, harvester share, and harvesting technology. Research evidence suggests that the presumed equilibrium between labor supply and labor absorption is becoming less important than the concepts of efficiency and profit in the economy of agricultural production.

PN-AAG-372

Paper copy \$5.00
Microfiche \$1.00

(009) LAND REFORM IN PLANTATION AGRICULTURE: AN ANALYSIS OF THE CASE OF SRI LANKA WITH SPECIAL REFERENCE TO THE PLANTATIONS

Fernando, Nimal
1978, 31p.

Wis. (AID/csd-2263 211 (d))

(In LTC research paper no. 72)

Discusses Sri Lanka's 1972 Land Reform Law and its 1975 Amendment in relation to the country's tea plantations. Exemption of plantations in land reform legislation has been common in many developing countries. While plantation structure impedes economic development in several ways-including employment (reduced employment per unit of land, seasonality)-it also may contribute to economic growth by increasing export earnings. This paper examines historical developments of plantation agriculture in Sri Lanka, especially the tea subsector. Agricultural, economic and social aspects are discussed. Described are the major provisions of the Land Reform Law, the expropriation and redistribution of 377,000 acres of tea land, and the institutions which now manage this land. Management of the estate lands since the take-over is reviewed. According to the author, the land reform program in Sri Lanka does not constitute "true land reform" because it has taken the form of nationalization and the state has become the largest landowner in the country. The economic, political and social circumstances of the landless laborers remain virtually unchanged.

PN-AAG-374

Paper copy \$3.88
Microfiche \$1.00

(010) LAND TENURE AND AGRICULTURAL DEVELOPMENT

Cummings, R.W.
1978, 38p.

Wis. (AID/csd-2263 211 (d))

(In LTC paper no. 117)

Reviews the major issues involved in changes in land tenure and the relationships between agricultural development and the land tenure system. A typology of tenure systems, based on distribution of landownership and average size of farming operation, identifies eight types of arrangements. Four criteria are discussed for evaluating land tenure systems: net value of production, marketed surplus, capital investment, and participation in the economy. While small family farms and group farms appear to best satisfy the criteria for evaluation, several contingent variables must be considered: land quality, minimum land size, and the conditions under which land is owned or rented.

Specific measures of land reform and tenancy reform are presented. Also discussed are the importance of government commitment and the efficiency of administrative organization in implementing land redistribution. Progressive land taxation, land

settlement, and rural development are considered as alternatives to land reform. The author concludes that neither land reform alone nor even agrarian reform (the creation of physical and institutional infrastructure to support small landholders) can be successful unless integrated into the larger goal of modernization of the entire economy.

PN-AAG-375

Paper copy \$4.75
Microfiche \$1.00

(011) THE POLITICAL ECONOMY OF AGRICULTURAL DEVELOPMENT

Parsons, K.H.
1978, 26p.

Wis. (AID/csd-2263 211(d))

(In LTC paper no. 116)

Discusses agricultural development from a historical and political economy perspective. The structure of an economy and the social and political matrix within which economic activities occur must be considered when examining the role of agriculture in national economic life. Using historical evidence from various parts of the world, particularly China and England, the author traces the modification of subsistence agricultural economics and the ways in which institutional innovations support economic development.

This report focuses on the mitigation of rural poverty, which is considered the greatest challenge to agricultural development. Agrarian reform efforts of the twentieth century are reviewed and evaluated. The author concludes by discussing how the "excluded poor" can obtain both economic and political citizenship.

PN-AAG-376

Paper copy \$3.25
Microfiche \$1.00

(012) MAXIMIZING HUMAN RESOURCES IN A FINITE LABOR SITUATION: LABOR ECONOMICS OF THE GBANNAH MAH

Riddell, J.C.
1978, 35p.

Wis. (AID/csd-2263 211(d))

(In LTC paper no. 118)

Describes the traditional economic system of the Gbannah Mah, the tropical forest farmers of north central Liberia, and examines the kinship system and organizational structures which fix the labor supply. The economic strategies and the social relations which enable efficient adjustment to their tropical forest environment are discussed. The relationship between the Mah's domestic economy and its ideology is explained as it concerns their reaction to the national and international political economy. The Gbannah data illustrates the transition from complete control over resources and modes of production to an eventual loss of control. Adjustment of the traditional agricultural economy to recent economic development has occurred in three areas: land loss, absence of males engaged in wage labor, and cash cropping. These adjustments have resulted in the Mah villagers' participation in two incompatible economic systems simultaneously.

PN-AAG-377

Paper copy \$4.38
Microfiche \$1.00

(013) ORGANIZATIONAL ISSUES IN GROUP FARMING IN SOUTH KOREA

Reed, Edward
1978, 30p.

Wis. (AID/csd-2263 211(d))

(In LTC paper no. 119)

Describes and assesses the viability and potential of group farming

in South Korea. Two types of group farming are analyzed: a farmer-initiated, village-wide cooperative work team for rice transplanting; and a government-sponsored joint rice farming program. Data comes from a 1977 case study of two villages in Pyongtek County, Kyonggi Province, in northwestern South Korea. Discussed are the organization, rationale and operations for the cooperative work team (CWT) and joint rice farming activity. The two types of group farming are compared as they concern organizational issues which arise in cooperative agricultural operations. These issues are: source of initiative; level of interaction; participant mobilization; leadership and decisionmaking, compensation; and performance incentives. The author explains how the factors of subjective economic rationality and compatibility with the social setting account for the greater success of the CWT. The bases for group farming in South Korea and the prerequisites for the functioning of the natural village as the critical organizational unit are explained.

PN-AAG-378

Paper copy \$3.75
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(014) AN INVESTIGATION OF THE LACK OF MIXED FARMING IN THE WEST AFRICAN SAVANNAH: A FARMING SYSTEM APPROACH FOR TENKODOGO, UPPER VOLTA

Delgado, C.L.
1978, 83p.

Mich. (AID/afr-C-1169)

(In Discussion paper no. 74)

Examines factors relating to the integration of cattle raising into smallholder agriculture in the Tenkodogo area, of Upper Volta, in Africa. Farm practices data such as labor flows, land use patterns, outputs, cattle labor requirements, and ownership patterns, are employed to test a hypothesis explaining why farmers prefer to entrust their cattle to Fulani herdsmen living outside the village. A linear programming model, incorporating 11 crop and two small stock activities and constructed from the data, is described. The model is used to identify optimal production strategies and resource constraints under different assumptions involving farmers' desires for self-sufficiency in food grains. Includes discussion, data, and illustrations regarding arguments for and against the problem; labor use by sample farms; land, capital, and farm output; farm production models; results and conclusions; and policy recommendations.

PN-AAG-425

Paper copy \$10.38
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(015) ROLE OF CREDIT IN FARMERS' ADJUSTMENT AGAINST RISK IN ARID AND SEMI-ARID TROPICAL AREAS OF INDIA

Jodha, N.S.
1978, 46p.

ICRISAT (AID/ta-G-1073 GTS)

(In Economics Program occasional paper no. 20)

Examines the possibilities of strengthening farmers' adjustment mechanisms--particularly through credit--against risk induced by weather conditions in arid and semi-arid tropical areas of India. Contains discussions of weather-induced risk in the form of drought. Analyzes farmers' adjustment mechanism, some basic to the farming system and others clear-cut external manifestations. Studies role of credit in adjustment against risk, credit for "drought proofing" the farming system, credit for minimizing risk/loss, and credit in loss-management. Credit in two phases of adjustment, the drought year and post-drought activities, as well as private and

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institutional lending agencies, are covered along with; policy implications for credit programs. Cooperatives and various riskdefusing credit strategies are discussed in separate section. Tables of relevant data and references are included.

PN-AAG-442

Paper copy \$5.75
Microfiche \$1.00

(016) LIFE IN RURAL INDONESIA

Babunakis, Daphne; Thorn, J.A.; Trostle, Judy; Drobnek, Manya; Reese, Barbara
1978, 77p.

AID/ASIA/USAID/Indonesia

Contains profiles of lives of five different types of poor, rural Indonesians; the upland rice farmer, the coastal fisherman, a transmigrant family, a landless laborer, and wet-rice farmers. Discusses family life, housing, diet, health, education, work activities, social relations, and organizations. Three essays contain bibliographies. Presents views of Indonesian life by American women living in Jakarta and writing in simple, direct style. Helps to develop close empathy for Indonesian people.

PN-AAG-491

Paper copy \$9.63
Microfiche \$1.00

(017) FARM LABOR IN LESOTHO: SCARCITY OR SURPLUS?

Wykstra, R.A.
1978, 45p.

Colo. State (AID/ta-BMA-6)

(In LASA discussion paper ser. no. 5)

Examines the labor surplus thesis, which suggests improved income and the general welfare depends on generating employment opportunities to absorb manpower, in connection with farm labor in Lesotho, in Southern Africa. Suggests a possible shortage amidst labor surpluses to explain the decline of Lesotho's agricultural sector during the last quarter-century. Contains discussions of aggregate labor supplies; labor-income response mechanism; male and female labor supplies in agriculture; labor demand, by farm function and crop; and human capital balance sheet in agriculture. Concludes that agricultural labor shortages prevail in terms of labor force withdrawals in deference to income levels/employment options in South Africa and "food-aid" labor projects. This results in increased fallow land, yield and output declines, and constraints on future development of crop agriculture. Recommends contingency plans to relieve overworked female component of labor force and to develop a migrant worker re-employment program. Includes 15 tables of relevant labor and agricultural data.

PN-AAG-511

Paper copy \$5.63
Microfiche \$1.00

(018) ANATOMY OF A PEASANT ECONOMY; A RICE VILLAGE IN THE PHILIPPINES

Hayami, Yujiro; Kikuchi, Masao; Moya, P.F.; Bambo, L.M.; Marciano, E.B.
1978, 160p.

IRRI (AID/ta-G-1074 GTS)

Assesses influences of improved rice-growing technology in effecting economic and social changes in rural Philippines villages. Analyzes impact of new rice technology on various facets of life such as employment and income distribution. Approaches study through an intensive case study of a typical rice village, using household record-keeping and interview surveys. Monitors flows of income from rice farming and other enterprises among classes of village households. Authors see report as providing one of the most comprehensive sets of data yet collected, assembled, and analyzed. Contains extensive photographic illustrations and tables. Its

chapters approach the Philippine peasant economy; profile rural villages; set labor patterns and define the use of labor in rice production; specify income flow and patterns; classify and value household assets, construct village economies; and establish basis for understanding the village economy. Offers liberal list of reference works.

PN-AAG-562

Paper copy \$20.00
Microfiche \$2.00

(019) SOCIO-ECONOMIC PROFILE OF RURAL EGYPT

Harik, Iliya
1979, 167p.

Cornell (AID/ta-BMA-8)

Presents socio-economic profile of rural Egypt focusing on the impact of agrarian reform programs undertaken in recent years. Suggests that despite mixed results, the record of agrarian reform in Egypt has been upheld. To reasonable degree, original objectives have been fulfilled, particularly in areas of land distribution, maintenance of private property with considerable measure of collective management, preservation of productivity, secure tenancy for small farmers, credit facilities, political domination, participation in national policy regarding agriculture, and extending social services into rural areas. Suggests government was successful in achieving objective of diverting agricultural revenues to assist in developing national industry. Report notes that small cultivator has become the mainstay of Egypt's agricultural economy. Finds that agricultural mechanization has not undermined the country's household economy but rather sustained it through easy credit terms, land consolidation, and large-scale production adjusted to household system of cultivation through cooperatives. Study finds continuation of widespread poverty citing national government efforts to reclaim desert lands as key program in offsetting land shortage. Study contains 30 tables.

PN-AAG-593

Paper copy \$20.88
Microfiche \$2.00

(020) INCOME DISTRIBUTION AMONG FARMERS IN NORTHERN NIGERIA: EMPIRICAL RESULTS AND POLICY IMPLICATIONS

Matlon, P.J.
1979, 127p.

Mich. State (AID/ta-C-1328 Res.)

(In African rural economy paper no. 18)

Despite the Nigerian government objective of achieving a more equal distribution of gains from economic growth, the income gap between rich and poor in that African nation has widened substantially. Studies income distribution among farmers in Northern Nigeria to conclude that achieving goals have been hindered by insufficient knowledge about designing appropriate policies, implementing them, and measuring their impact. Observes difficulty in designing policy instruments which effectively reach more than a small proportion of the rural poor, the particular group under study. Finds three groups disproportionately represented among the poorest rural households: those headed by men under 25, by men over 60, and with larger than average number of children. Describes the need for policies which make farming more profitable, pointing up the importance of improved food grain technologies since most poor farmers themselves are net grain purchasers. Cites need for further study to explain farm productivity differentials with income classes. Identification of such factors could provide valuable guidance in designing improved technologies appropriate to low-income producers. Offers extensive bibliography and some illustrations.

PN-AAG-617

Paper copy \$15.88
Microfiche \$2.00

PLANT PRODUCTION

(021) BIOLOGICAL NITROGEN FIXATION: RESEARCH NEEDS FOR AGRICULTURAL DEVELOPMENT IN THE TROPICS

Frederick, L.R.
1978, 10p.

DS/AGR/TSWM

Discusses the biological knowledge and technology, and the training and organization of human resources needed to develop a program in biological nitrogen fixation. Nitrogen, essential for plant growth and for protein and carbohydrate production, is critically important in the growing world food shortage. The use of legumes and inoculants to produce fixed nitrogen is considered and an alternative to factory fixation of N₂. Manufacturing fertilizer nitrogen entails high costs and dependence on fossil fuels, using it requires information about the efficient use of fertilizer which is absent or unavailable to small farmers in LDCs. Legumes are a major part of the native vegetation in tropical regions, yet only a few species have been developed for agricultural use. Optimal culture of legumes requires both an adequate supply of legume seeds and cultures of rhizobia and proper use by the grower.

Principles regarding various aspects of biological nitrogen fixation, adapted from six recently published reviews are listed. Priorities are discussed for research activities, for facilities and for a training program in biological nitrogen fixation, as they apply to the immediate needs of LDCs.

PN-AAG-127

Paper copy \$1.25
Microfiche \$1.00

(022) YIELD INCREASES OF TROPICAL GRASSES AFTER INOCULATION WITH SPIRILLUM LIPOFERUM

Smith, R.L.; Schank, S.C.; Bouton, J.H.; Quesenberry, K.H.
1978, 7p.

Fla. (AID/ta-C-1376 Res.)

(In Ecol. Bull. (Stockholm), v. 26, 1978, p. 380-385)

For three years, higher dry matter yields have been obtained from grasses inoculated with tropical strains of the bacterium *Spirillum lipoferum* than uninoculated counterparts. During the first year, 1974, inoculated *Panicum maximum* (guineagrass) and *Digitaria decumbens* (digitgrass) produced 80% and 61% more protein than uninoculated controls. In 1975, inoculation produced significantly higher protein and dry matter yields in *Pennisetum americanum* (pearl millet) and *P. maximum*. Projected yields using regression analysis of both pearl millet and guineagrass indicated that about 40 kg. N. ha⁻¹ yr⁻¹ were replaced by inoculation. Although overall production was lower during 1976, yield responses due to inoculation were similar to those of 1975 in guineagrass.

Nitrogen fertilizer was required to enhance response to inoculation and higher rates of nitrogen fertilizer repressed response. Acetylene reduction verified that nitrogen fixation occurred, but did not correlate well with yield increases.

Immunofluorescent techniques were used to specifically identify and monitor *Spirillum lipoferum* populations in the soil. These data are being used to evaluate inoculation procedures.

Inoculation with *Spirillum lipoferum* has given yield increases for three consecutive years in Florida. This indicates:

1. response to inoculation can be repeated.
2. economically important amounts of nitrogen can be replaced by inoculation.

3. a high potential exists for developing grass-bacteria systems

PN-AAG-428

Paper copy \$.88
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(023) EFFECT OF INOCULATION WITH AZOSPIRILLUM AND AZOTOBACTER ON TURF—TYPE BERMUDA GENOTYPES

Baltensperger, A.A.; Schank, S.C.; Smith, R.L.; Littell, R.C.; Bouton, J.H.; Dudeck, A.E.
1978, 4p.

Fla. (AID/ta-1376 Res.)

(In Crop Science, v. 18, 1978, p. 1043-1045)

Eight selected bermudagrass (*Cynodon dactylon* L. Pers.) genotypes were inoculated with a mixed culture of the N₂-fixing bacteria, *Azospirillum* and *Azotobacter*, to determine plant growth response to inoculation under greenhouse conditions. Top, crown, and root growth and N content were measured. At low N fertility, top growth was increased 17% as a result of inoculation. Inoculation also resulted in increased total N accumulation in the top growth. Crown and root growth was not increased by inoculation and total dry weight of all plant parts was not significantly increased. The high fertility treatments gave significantly higher clipping yields, as expected, but no significant differences were observed between the inoculation treatments. No leaf color differences were observed as a result of inoculation. Bermuda-grass genotypes were not significantly different in response to inoculation treatments.

PN-AAG-430

Paper copy \$.50
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(024) RESPONSE OF PEARL MILLET INBREDS AND HYBRIDS TO INOCULATION WITH AZOSPIRILLUM BRASILENSE

Bouton, J.H.; Smith, R.L.; Schank, S.C.; Burton, G.W.; Tyler, M.E.; Littell, R.C.; Gallaher, R.N.; Quesenberry, K.H.
1979, 6p.

Fla. (AID/ta-C-1376 Res.)

(In Crop Science, v. 19, 1979, p. 12-16)

Plant yield and acetylene reduction were measured on six hybrids and 15 inbreds (including the hybrid parents) of pearl millet, *Pennisetum americanum* (L.) K. Shum, after field inoculation with *Azospirillum brasiliense*, Sp 13t (reclassified from *Spirillum lipoferum* Beijerinck). During the first year of testing, inoculation responses were investigated among all plant genotypes by measuring plant dry weight, % N, total N, and acetylene reduction activity. A smaller population of genotypes were tested a second year for repeatability of inoculum response. The first year, one hybrid, Tift 23DA x Tift 186 ('Gahi 3'), gave significantly higher plant dry weight and total N in response to inoculation. Inoculated Gahi 3 produced 31.7% more dry weight and 37.4% more total plant N when compared to autoclaved inoculum controls. No inbred was found to respond. Acetylene reduction values were low among all genotypes (range 0.54 nmole/9g dry root x hour⁰) and did not support yield effects or confirm inoculum treatments. Inoculation responses were found to be repeatable for all genotypes tested during the second year (positive or negative) but not a statistically significant magnitude. Of the genotypes tested both years, a combined analysis of the 2-year yields revealed significant dry weight increases after inoculation of 19.2 and 14.0% with Gahi 3 and the inbred, Bil 3B, respectively. Again, acetylene reduction values did not explain any data. A N balance study was conducted in greenhouse containers on inoculated Gahi 3 plants in an attempt to repeat the yield differences observed in the field and

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to monitor inputs of N into the soil-plant system. No significant yield increase of N into the soil-plant system was found due to inoculation. Sampling error possibly negated in accurate measurements of all N. 11.

PN-AAG-431

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(025) IMPROVEMENT OF THE NUTRITIVE QUALITY AND PRODUCTIVITY OF BARLEY FOR SEMI-ARID REGIONS; FINAL REPORT, MARCH 1974 - JULY 1978

Eslick, R.F.; Carter, L.P.
1978, 50p.

Montana (AID/ta-C-1094 Res.)

Summarizes research accomplishments and other activities of four year project to improve barley as a significant crop in many LDCs. Research activities are organized according to the three major study objectives: to increase the nutritive value of barley; to increase the yield of barley grown in semi-arid regions; and to decrease the losses caused by barley diseases. Agronomic evaluation characterizing the available high-lysine mutants and overcoming difficulties in using these mutants and effects of starch and protein structures on nutritional quality, are reported. Developing drought-resistant cultivars and breeding for disease resistance were major activities related to improving barley yield.

Contains list of publications resulting from this research; lists of papers presented at various professional meeting; enumeration of other activities of the research team; and a copy of the program of the Fourth Regional Winter Cereal Workshop on Barley, held in Amman, Jordan.

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Paper copy \$6.00
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(026) RAPID SCREENING OF MAIZE FOR TOLERANCE TO ALUMINUM IN BREEDING VARIETIES BETTER ADAPTED TO ACID SOILS

Wash. State Univ.
1978, 25p.

Wash. State (AID/ta-G-1415; AID/ta-C-1209)

(In AID technical series bulletin no. 22)

Reports on laboratory research methods used in developing varieties of maize better fitted to acid soil. In the stain method described, six aluminum levels are applied, with three maize seedlings treated in each level. In the 14-day nutrient solution method, four aluminum treatments and three seedlings per treatment are used. With each method, root growth is evaluated by measuring the length of the primary root and by estimating the effects of the aluminum treatment in the growth of secondary roots. Reports on the materials, solutions, procedures, and evaluates results for the two methods. Includes photographs which represent the materials, laboratory techniques, and seedling growth process.

PN-AAG-529

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(027) THE TECHNICAL AND ECONOMIC CHARACTERISTICS OF RICE POSTPRODUCTION SYSTEMS IN THE BICOL RIVER BASIN

IRRI; Philippines Univ. Dept. of Agricultural Process Engineering and Technology
1978, 230p.

IRRI (AID-492-871-T)

Examines problems in grain losses during rice production processes, as practiced in the Bicol River Basin Region, of the

Philippines. Focuses largely on technical aspects of postproduction operations including the interdependencies that exist between components of each system. Attempts to examine the economic and institutional factors that condition the selection of particular technology patterns. Provides useful guidelines in planning and developing improved post-production programs. Assumes grain losses are unnecessarily high and prescribes the introduction of improved management techniques and technology. Further concludes that Bicol farmers and processors cannot or will not take action to eliminate losses without receiving outside assistance. Cites difficulty in examining the interaction of technology with economic incentives faced by farmers and processors. Recognizes difficulty in making modern technologies available to small farmers, particularly when capital requirements and risk are present. Assesses various post-production equipment presently used in Bicol River Basin.

PN-AAG-561

Paper copy \$28.75
Microfiche \$3.00

(028) LAND PREPARATION AND CROP ESTABLISHMENT FOR RAINFED LOWLAND RICE

De Datta, S.K.; Morris, R.A.; Barker, Randolph
1978, 26p

IRRI (AID/ta-G-1074 GTS)

(In IRRI res. paper ser. no. 22)

Reviews traditional rainfed rice land preparation transplanting system and alternative new systems of land preparation and crop establishment. These latter systems may become economically feasible as a consequence of new rice technology including short duration varieties, herbicides, powerful tillage machinery. Cites major advantages of wet land tillage in the reduction of draft requirements; weed control, ease of transplanting, lessened soil fertility, and reduced percolation losses. Disadvantages of soil tillage discussed in study include increased late-season drought risk, high transplanting labor requirements, and power unit size limitations. Reviews forms of dryland tillage, citing major advantages of early crop growth, elimination of labor for seedbed preparation and transplanting, adequate traffic ability for larger power units, maintenance of soil structure for upland crops following rice, and the reduction of many insect and disease pressures. In contrast, disadvantages of dryland tillage include high draft requirements, comparatively exacting early-weed control requirements, comparatively high fertilizer losses, and exposure to soil-inhabiting insects and blast disease. Studies show that changes in land preparation and crop establishment methods. Includes list of references.

PN-AAG-563

Paper copy \$3.25
Microfiche \$1.00

(029) GENETIC INTERRELATIONSHIPS OF IMPROVED RICE VARIETIES IN ASIA

Hargrove, T.R.; Coffmann, W.R.; Cabanilla, V.L.
1979, 36p.

IRRI (AID/ta-G-1074 GTS)

(In IRRI res. paper ser. no. 23)

Studies genetic interrelationships of rice varieties in Asia as part of better understanding crop-destructive insect and disease epidemics of past. Shows genetic diversity of improved rice varieties released in Asia, by analyzing selected crosses made in seven Asia countries. Over ten-year period, percentage of semi-dwarf parents used in the total gene pool nearly doubled because breeders were increasing crosses of semidwarf parents with other semidwarf varieties. Taichung Native I and IR8 were the most extensively used gene sources in 1965-67 but found to drop off to nearly zero in the next ten years. Shows use of other IRRI semi-dwarfs increased significantly but the strongest trend was use of locally developed

semidwarf, up from two per cent to 49 per cent in 1974-75. Study traces all IR varieties to same maternal parent, Cina, implying that components of their cytoplasm are similar. Cina represents maternal of post-IR8 varieties in six Asian nations. The same holds for 79 IRYN (International Rice Yield Nursery) entries from ten nations. Concludes that cytoplasmic similarity of modern varieties, while posing no immediate problem, is sufficiently relevant for prompt broadening of maternal genetic base of modern rices.

PN-AAG-564

Paper copy \$4.50
Microfiche \$1.00

(030) SULFUR NUTRITION OF WETLAND RICE

Blair, G.J.; Mamaril, C.P.; Momuat, E.
1978, 30p.

IRRI (AID/ta-G-1074 GTS)

(In IRRI res. paper ser. no. 21)

Concludes that increased yields of rice being enjoyed through the use of fertilizers containing little or no sulfur, has led to sulfur deficiency in rice. Cites lack of study in the cycling of sulfur through the rice plant. Discusses general outline of sulfur cycle from the viewpoint of soil transformations and plant requirements. Finds little or no value in published data. Suggests that analysis of whole tops of rice plants, between tillering and panicle initiation, and of rice grains themselves, might correlate well with sulfur responsiveness and thus can be used for diagnostic purposes. In this regard, the study provides a tentative system of diagnosis. As additional information, also presents list of sources of sulfur in rice culture, breaking these down into three categories: sulfate-containing fertilizer, inorganic sources that undergo oxidation before becoming available to plants; and organic sulfur sources. A list of literature in the study, containing 69 references, is provided.

PN-AAG-565

Paper copy \$3.75
Microfiche \$1.00

(031) METHODS OF SCREENING VARIETAL RESISTANCE TO CERCOSPORA LEAF SPOT OF RICE

Estrada, B.A.; Ou, S.H.
1978, 10p.

IRRI (AID/ta-G-1074 GTS)

(In IRRI res. paper ser. no. 19)

Autoclaved rice stem nodes with prune juice provide a favorable medium for the isolation of *Cercospora oryzae*, the fungus causing *Cercospora* leaf spot or narrow brown leaf spot, and for the mass production of spores spraying of spores in late afternoon resulted in good infection on plants in the field. As shown by artificial inoculation, rice at different stages of growth is susceptible to *C. oryzae*. An incubation period of 20 days is necessary before the first few lesions appear and 30 days before the maximum number of lesions is reached. The slow growth of the fungus causes the late appearance of the disease, generally observed in the field. A method of artificial inoculation for screening varieties for resistance and a disease scale of 0 to 9 units, based upon the number of lesions, are suggested.

PN-AAG-710

Paper copy \$1.25
Microfiche \$1.00

(032) TROPICAL CLIMATE AND ITS INFLUENCE ON RICE

Yoshida, Shouichi
1978, 28p.

IRRI (AID/ta-G-1074 GTS)

(In IRRI res. paper ser. no. 20)

Major climatic factors are discussed in relation to their influence on crop period, productivity, and stability.

Most places in monsoonal Asia receive about 300 cal/cm² per day during the ripening period of the wet season rice crop. With the right variety and proper management this level of solar radiation should allow rice crops to produce 4 to 5 t/ha.

Advantages and disadvantages of altering plant height and growth duration are described. Intermediate plant height has certain recognized benefits when water control is undependable but these benefits may not be realized unless the varieties resist lodging. Early maturing varieties will become increasingly important. For direct-seeded rice, the shortest growth duration, without much sacrifice in yield potential, is about 90 days; for transplanted rice, it is about 100 days.

PN-AAG-711

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LIVESTOCK

(033) LATIN AMERICAN SYMPOSIUM ON MINERAL NUTRITION RESEARCH WITH GRAZING RUMINANTS; PROCEEDINGS OF THE CONFERENCE, BELO HORIZONTE, BRAZIL, 1976

Conrad, J.H.; McDowell, L.R. Fla. Univ. of Food and Agr. Sciences
1978, 203p.

Fla. (AID/ta-C-1153 Res.)

Includes 27 reports on basic knowledge, methodology, and recent findings relating to mineral deficiencies and toxicities in Latin America. The papers summarize current information about the mineral elements which influence productivity of grazing ruminants in tropical areas. Low productivity, as judged by the meat and milk yield per animal, accounts for the limited supplies of animal protein in LDCs. A wide variety of research topics discuss improving productivity in grazing ruminants. Among these topics are (1) soil mineral concentrations and properties, (2) individual mineral characteristics, (3) soil-plant-animal mineral relationships, (4) techniques of mineral research, (5) current status of locating regions of mineral deficiencies and toxicities, (6) the determination of nutrient requirements of ruminants in the tropics, (7) diagnosis of diseases caused by mineral deficiencies, and (8) methods of mineral supplement formulation and administration for grazing ruminants. Many of the reports display research findings in tables and figures. Included are photographs illustrating mineral deficiencies and toxicities in grazing ruminants.

PN-AAG-333

Paper copy \$25.38
Microfiche \$3.00

(034) LIVESTOCK AND POULTRY IN LATIN AMERICA

Conf. on Livestock and Poultry in Latin Am. 9th, Univ. of Fla., 1975
1975, 227p.

Fla. (AID/csd-3684 211 (d))

Contains 32 papers presented at the 9th Annual Conference on Livestock and Poultry in Latin America. The papers are organized into seven sections: Agronomy including biological nitrogen fixation, nitrogen fertilizer, legumes and legume-grass, and pasture utilization; Beef Cattle including artificial insemination, calf health; Dairy Cattle and factors of milk production and fertility; Horses including parasite and disease control, rations, and breeding; Poultry feeding disease, and processing of poultry

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products; Swine nutrition, reproduction, and feed. Many papers contain figures and tables representing original and previously published data on the topics mentioned above.

PN-AAG-409

Paper copy \$28.38

Microfiche \$3.00

LAND & SOIL

(035) PROCEEDINGS OF THE U.S. STRATEGY CONFERENCE ON TROPICAL DEFORESTATION, WASHINGTON, D.C. 1978

A.I.D.; U.S. Dept. of State

1978, 84p.

Reflects the major conclusions, recommendations, points of view, and formal statements of the "U.S. Strategy Conference on Tropical Deforestation" that convened in Washington, D.C., June 12-14, 1978. Finds world confronted by an extremely serious problem in the accelerating loss of forest and vegetative cover in the humid and semiarid lands within or near tropical latitudes. Suggests accelerated and coordinated attack if these greatly undervalued and probably irreplaceable resources are to be protected from virtual destruction by the early part of the next century. Cites as a major cause of deforestation the lack of information and documentation concerning the importance of these resources. Suggests population growth and need for firewood as additional key factors. Points to need for appropriate monitoring and assessing systems; improving basic physical, chemical, biological, and ecological processes; and developing alternatives to present forest use as deterrants for further destruction of forests. Includes in study a list of participants and offers sections on presentations, workshops, and "reactions and next steps."

PN-AAG-132

Paper copy \$10.50

Microfiche \$1.00

(036) SOIL—RESOURCE DATA FOR AGRICULTURAL DEVELOPMENT

Swindale, L.D.; Sem. on the Uses of Soil Survey and Classification in Planning and Implementing Agr. Development, Hyderabad, 1976

1978, 316p.

Hawaii (AID/ta-C-1108 Res.)

Provides a state of the art overview of methods for collecting, classifying, interpreting, and presenting soil resource data for land use planning in tropical agriculture. The report consists of revised versions of 23 papers presented at an international seminar entitled "The Uses of Soil Survey and Classification in Planning and Implementing Agricultural Development, held in Hyderabad, India, in January 1976. Paper topics include the design of soil surveys, interpretation of soil maps, and the need for an international tropical soil research and technology transfer network. Many of the papers addressed the soil management problems of specific geographical areas.

PN-AAG-179

Paper copy \$39.50

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(037) ABSTRACTS: FIRST INTERNATIONAL RANGELAND CONGRESS, DENVER, COLO., AUGUST 14-18, 1978

Society for Range Management, Denver, Colo.

1978, 69p.

SRM (AID/ta-G-1398)

This volume contains the abstracts of the 200 papers delivered at the First International Rangeland Congress. It is the companion volume to PN-AAG-426, the Congress Proceedings.

PN-AAG-427

Paper copy \$8.63

Microfiche \$1.00

(038) PROCEEDINGS OF THE FIRST INTERNATIONAL RANGELAND CONGRESS, DENVER, COLO., AUGUST 14-18, 1978

Hyder, D.N.; Society for Range Management, Denver, Colo.

1978, 754p.

SRM (AID/ta-G-1398)

Contains 200 papers presented at the First International Rangeland Congress, dealing with conservation, improvement, and management of natural grazing land and the animals that use these lands. Following two special sections, Plenary Papers and Man and the Biosphere Program, papers are organized according to these broad topics: sociological and political aspects of rangeland resource management; range economics and management planning; basic range ecology and rangeland ecosystems; rangeland soils; rangeland plants; rangeland animals; inventory and evaluation of range resources; rangeland management practices and systems; and rangeland resource improvement. Many papers contain tables, figures, and/or photographs. Includes author index and word/phrase index.

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Microfiche \$8.00

(039) MANAGEMENT OF RANGELANDS AND OTHER GRAZING LANDS OF THE TROPICS AND SUBTROPICS FOR SUPPORT OF LIVESTOCK PRODUCTION

Sprague, H.B.

1979, 114p.

AID/DS/AGR

(In Technical series bulletin no. 23)

Undertakes to assemble and summarize available information on tropical and subtropical grasslands with particular reference to their potential development and utilization. Cites notable example of outstanding success in increasing forage production and nutritive values of permanent grasslands; and suggests these isolated successes may be enlarged to encompass nearly all ranges and permanent grasslands. Recognizes the importance of providing adequate reserve supplies of feed in seasons when little or no plant growth is possible. Suggests the use of protected grazing reserves or feeds that have been harvested and stored as support of stock. Violation of this principle, states the paper, is widespread in the tropics and subtropics to the detriment of agricultural development. Concludes that substantial increases in productivity of ruminant livestock is widely feasible by applying known principles and practices; by improving the management of natural resources of land, climate, and vegetation; and by introducing specific programs for particular ecological zones and regions of individual countries.

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WATER RESOURCES

(040) WATER AND CONSERVATION PROGRAMS FOR CAPE VERDE

Hargreaves, G.H.
1977, 61p.

Hargreaves (AID/afr-C-1303)

(In English and French; French, 61p.: PN-AAG-340)

Reviews activities in Cape Verde related to irrigation development, water spreading, and soil conservation. Focuses on the island of Santiago because of its size, population, and potential resources. Described are conditions relative to soils, climate, hydrology, and land use. Specific program recommendations are made for new activities in irrigation experiments and demonstration, training, meteorology, hydrology, bed load measurement, surface erosion measurements, watershed management, ground water development, reforestation. Recommendations are also made for an improved inventory of the land and water resources available for agriculture. Cost estimates for first-priority projects are provided. Appended is an index of climate and moisture availability, by months of the year, for the islands of Cape Verde.

PN-AAG-339

Paper copy \$7.63
Microfiche \$1.00

(041) FARM IRRIGATION CONSTRAINTS AND FARMERS' RESPONSES, COMPREHENSIVE FIELD SURVEY IN PAKISTAN; VOL. I: SUMMARY

Lowdermilk, M.K.; Early, A.C.; Freeman, D.M.
1978, 150p.

Colo. State (AID/ta-C-1411 Res.)

(In Water management technical rpt. no. 48-A)

Summarizes findings of six-volume, comprehensive field study done in Pakistan which addresses farmers' responses to selected irrigation constraints on their crop production systems. Contains major findings and policy implications related to the irrigation system, agronomic factors, and farmers' perceived constraints regarding economics, knowledge of agricultural practices, water codes and regulations, and farmer organization. Using the survey data, possible criteria (physical, economic and social) are described which must be considered in the selection of watercourse commands for comprehensive improvement of water management. Also discussed are the implications of subsequent projects, survey and/or implement improvement programs as they relate to delivery and application efficiencies. Each major finding is referenced to a more detailed discussion in the companion volumes of the report. A glossary of English (including local English) and Urdu/Punjab terms is included.

PN-AAG-347

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(042) FARM IRRIGATION CONSTRAINTS AND FARMERS' RESPONSES, COMPREHENSIVE FIELD SURVEY IN PAKISTAN; VOL. II: PURPOSE, SIGNIFICANCE, AND DESCRIPTION OF IRRIGATION SYSTEM

Lowdermilk, M.K.; Freeman, D.M.; Early, A.C.
1978, 168p.

Colo. State (AID/ta-C-1411 Res.)

(In Water management technical rpt. no. 48-B)

Part of a comprehensive field study of the irrigation system in Pakistan, Volume II contains an overview of the irrigation system discussions of village social systems, and analysis of relationships between farmers and regulatory/service organizations. Topics

included in the discussion of the irrigation system are: (1) sources and conveyance of water; (2) and (3) types and problems of watercourse command areas; (4) mogha (a specific type of water outlet) and the watercourse; (5) the watercourse command and farm units; and (6) the farmer. The section on the sociological environment of the villages includes material on social organization (brotherhood groups, caste groups, and village headmen), selected characteristics of the sample villages, and the relationship between village organization and collective goods. Also described are linkages of farmers with the Irrigation and Agriculture departments and with other regulatory and service organizations. Includes tables and figures representing survey data and secondary source data. Appended are bibliographic references and a glossary of English (including local English) and Urdu/Punjab terms.

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(043) FARM IRRIGATION CONSTRAINTS AND FARMERS' RESPONSES, COMPREHENSIVE FIELD SURVEY IN PAKISTAN; VOL. III: CONSEQUENCES OF PRESENT FARM WATER MANAGEMENT SYSTEM

Early, A.C.; Lowdermilk, M.K.; Freeman, D.M.
1978, 291p.

Colo. State (AID/ta-C-1411 Res.)

(In Water management technical rpt. no. 48-C)

Volume III of a comprehensive field study of the irrigation system in Pakistan presents findings concerning the consequences of the present irrigation system. Contains material on (1) physical and social characteristics of the irrigation system; (2) consequences of present farm water management (conveyance efficiencies and loss rates on the watercourse); (3) field application efficiencies as judged by macro site and positional variables; (4) irrigation efficiency; (5) land use, cropping patterns and cropping intensities; and (6) yields on wheat, rice, and cotton crops. Over 100 tables and figures, representing field survey data and secondary source data, are included. Appended are bibliographic references and a glossary of English (including local English) and Urdu/Punjab terms.

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(044) FARM IRRIGATION CONSTRAINTS AND FARMERS' RESPONSES, COMPREHENSIVE FIELD SURVEY IN PAKISTAN; VOL. IV: MAJOR CONSTRAINTS CONFRONTING FARMERS EXPLAINING...LOW CROP YIELDS

Lowdermilk, M.K.; Freeman, D.M.; Early, A.C.
1978, 280p.

Colo. State (AID/ta-C-1411 Res.)

(In Water management technical rpt. no. 48-D)

Volume IV of a comprehensive study of Pakistan's irrigation system examines factors associated with low crop yields emphasizing farmers' perceptions of constraints. Farmers identified water problems as more constraining than all other farm problems combined. Reports findings regarding: (1) physical constraints e.g., farm location, water availability and adequacy; (2) agronomic and economic constraints including use of fertilizer; selected farm technologies; high yielding crop varieties; and availability and sources of credit; (3) information constraints concerning crop selection, water application, soil-water-plant relationships, sources of watercourse conveyance losses, institutional services, and management practices; and (4) institutional and organizational constraints including the concept of collective goods and incentives to organize, organizational methods relating to mosques and schools, social conflict,

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distribution of power and influence. Appended are bibliographic references and a glossary of English (including local English) and Urdu/Punjab terms.

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Paper copy \$35.00
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(045) FARM IRRIGATION CONSTRAINTS AND FARMERS' RESPONSES, COMPREHENSIVE FIELD SURVEY IN PAKISTAN; VOL. V: FARMER RESPONSES TO MAJOR CONSTRAINTS: VIABLE OPTIONS...CONDITIONS

Freeman, D.M.; Lowdermilk, M.K.; Early, A.C.
1978, 72p.

Colo. State (AID/ta-C-1411 Res.)

(In Water management technical rpt. no. 48-E)

Part of a field study on the irrigation system in Pakistan, Volume V examines the existing options which farmers exercise in order to control erratic water supplies, and presents a comprehensive watercourse improvement program. Four existing water control options are described: (1) water purchasing and trading, (2) patterns of using private tubewells, (3) patterns of water theft, and (4) securing concessions from irrigation officials. Potential alternatives to secure additional irrigation supplies and to increase crop productivity are discussed. These include watercourse improvement, leveling fields, and adopting agronomic practices congruent with the requirements of high yielding varieties of seed. Tables and figures representing field survey data and secondary source data are included. Appended are references and a glossary of English (including local English) and Urdu/Punjab terms.

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(046) FARM IRRIGATION CONSTRAINTS AND FARMERS' RESPONSES, COMPREHENSIVE FIELD SURVEY IN PAKISTAN; VOL. VI: APPENDICES

Freeman, D.M.; Lowdermilk, M.K.; Early, A.C.
1978, 345p.

Colo. State (AID/ta-C-1411 Res.)

(In Water management technical rpt. no. 48-F)

Volume VI of a comprehensive study of Pakistan's irrigation system presents appendices which provide a wide range of information, background and raw data concerning farmers' responses to irrigation constraints appearing in companion volumes. Appendix I reports methods and sample, concepts and measures, test/retest reliability of selected measures, and research schedules. Water and watercourse level statistics and figures appear in Appendix II. Appendixes III and IV include tables summarizing socio-economic data and a series of maps indicating watercourses, nakka cuts, bunded units, cropping, topography, ownership, brotherhood/ownership, and general features. Appendix V comprises a variety of sociological and farm technology/organization data. A glossary of English (including local English) and Urdu/Punjab terms is also included.

PN-AAG-352

Paper copy \$43.13
Microfiche \$4.00

(047) SOCIAL COST-BENEFIT ANALYSIS OF THE NIANGA PILOT PROJECT, SENEGAL

Weiler, E.M.
1979, 291p.

Purdue (AID/afr-C-1258)

Analyzes Nianga Pilot Project, in Senegal, consisting of irrigated parcels arranged into 35 collective farms that employ tertiary irrigation, or full-water control. Uses ex post social cost-benefit analysis to derive three measures of project worth, as well as sensitivity analysis to examine effects of various yields, prices, etc. on cost-benefit ratios. Contains descriptive review of project from conception through current operational phase. Consists of introduction, with statement of problem and research objectives, methodology and study design. States the theory of cost-benefit analysis. Describes natural and socio-economic conditions of Nianga and the Nianga Project; concludes with policy recommendations. Bibliography in French and English. Appendices contain estimates market price for principal crops in traditional sector, value of family labor, farm budget for typical GP (Groupement de Producteurs), derivations of operating costs and shadow prices, and socio-economic survey of Nianga Pilot Perimeter.

PN-AAG-508

Paper copy \$36.38
Microfiche \$3.00

(048) AN EVALUATION PLAN FOR RURAL WATER SUPPLY PROJECTS

Popper, Roger; Burrill, George; Practical Concepts, Inc., Washington, D.C.
1978, 57p.

PCI (AID/ta-C-1469)

Presents a system for evaluating rural water-supply projects. Stresses clarifying project design and identifying promising evaluation approaches. Though field work was conducted in Upper Volta, in Western Africa, the evaluation plan is designed to be generally applicable to rural water projects. Sections of the paper provide a prototype logical framework for rural water supply projects, specifying goals, purpose, outputs, and assumptions. General requirements for an information system to support decisions in the Upper Volta Water Supply Project identify key decisions, decision-makers, and decision criteria. Approaches to measurement in an information system for the Upper Volta Project, note discrete methods for securing evidence on specific types of change, including a critique of some standard data-collecting methods. Recommends project management, project information system, methodological issues, summative evaluation. Appended are a previously published article entitled "Maximizing the Power of Causal Investigation: The Modus Operandi Method", and a brief discussion of two attempts at estimating diarrhea incidence without medical examination.

PN-AAG-538

Paper copy \$7.13
Microfiche \$1.00

(049) THE ECONOMICS OF WATER REFORM: INSTITUTIONAL DESIGN FOR IMPROVED WATER MANAGEMENT IN THE LDC'S

Bromley, D.W.; Taylor, D.C.; Parker, D.E.
1977, 51p.

Wis. (AID/ta-C-1261)

(In Center for Resource Policy Studies working paper no. 8)

Deals with the productivity of irrigated agriculture but, at the same time, emphasizes the importance of equity in irrigated systems. Suggests irrigation potentials may be expanded through the construction of new projects; rehabilitation and modification of

For addresses of issuing offices see the
Index of Issuing Offices at the rear.

DEVELOPMENT ASSISTANCE

the infrastructure in existing projects; modification of the operation and maintenance of irrigation infrastructure; and implementation and enforcement of rules and regulations governing the use of irrigation facilities. Encompasses a range of possibilities for enlarging and making more equitable the use of existing irrigation water supplies. Employs as illustrations projects in which decisions are made to redesign the infrastructure so as to allocate larger and more regular water supplies to more powerful irrigators; and enforce less rigorously rules and regulations against more powerful irrigators. Reviews literature on the role of water management in agricultural development and offers an explicit discussion of equity-based water reform. General principles, suggestions of organizational structure, and an overview of the Philippine Irrigators' Service Associations, and implementation possibilities, are offered.

PN-AAG-544

Paper copy \$6.38
Microfiche \$1.00

DEVELOPMENT ASSISTANCE

(050) THE BUREAUCRAT AS THE MANAGER OF DEVELOPMENT

Farrar, Curtis
1972, 41p.

AID/TA

Since the guiding concepts of aid programs seldom concern the impact on bureaucracies in the recipient countries, this article directs attention to the theory of bureaucracy as reflected in U.S. aid to Asian Countries in the past two decades. Discusses the constraints on the roles played by bureaucracies in receiving countries; influences of the donor and receiving bureaucracies on each other; and basic problems of development planning, policy advising, and limitations stemming from the realities of political leadership in the recipient countries. It also covers the concept of community development, programs designed to provide technical assistance in public administration, and the sector approach to development administration. An assessment of past problems identifies some reasonably constant factors: The recipient bureaucracy is assigned an extremely important role in the development process, and the aid relationship tends to strengthen its power. Aid programs have sought to reduce bureaucratic obstacles to development by providing incentives and trying to build development institutions. The aid program has tended to support capable individuals, stressing leadership capacity rather than bureaucratic function. It has pursued goals of democratic behavior and popular participation, but has restricted itself to the use of example and exhortation. However, notable changes have occurred in two decades. Technical assistance in public administration has shifted from trying to improve the bureaucracy in general to a focus on the management requirements of programs to solve specific development problems. Aid managers have learned to be more flexible in capitalizing on possibilities inherent in existing institutions, rather than seeking to change them.

PN-AAD-501

Paper copy \$5.13
Microfiche \$1.00

Please use the publication number in ordering.
Example: PN-AAB-000

(051) IMPROVING COMMUNICATION IN THE TECHNICAL COOPERATION RELATIONSHIP; AND MAKING BETTER USE OF TECHNICAL ASSISTANCE EXPERTS

Glaser, W.A.

1975, 10p.

Checchi, (AID/ta-C-1052)

(In IDR/Focus, no. 3-4, 1975 pp. 10-14, 21-25)

Both papers focus on the assignment and utilization of technical assistance experts in developing countries. Heretofore, insufficient emphasis has been placed on effective cross-cultural communication. Experts should receive adequate and countryspecific briefing, preferably visiting the project as short-term consultants prior to long-term assignment. Techniques and biases specific to the donor country should be recognized and integrated into the planning and implementation of multidonor projects. Emphasis should be placed on developing an atmosphere of trust and collaboration in expert-counterpart and high level donor-host relationships. Continuous, frank communication with an understanding of each other's roles, expectations and philosophies is preferable to periodic, formalized review. The author is a proponent of the establishment of a "career system" for technical assistance experts through measures designed to insure job security, provide adequate amenities and foster customary professional recognition. An expert's contributions might be acknowledged and recorded in published form; length of service, income and benefits should be set by contract. Recurring short-term assignment of experts who can secure leave and integrate overseas assignments with their home organization work is proposed as a viable alternative to the usual full-time, long-term freelance expert. Such an arrangement should provide adequate job security and would also enhance project success by allowing an opportunity for constant feedback and new inputs from a wellstocked home base. It would also sustain a more compatible and less pressure-prone, professional relationship between experts and their counterparts.

PN-AAG-255

Paper copy \$1.25
Microfiche \$1.00

(052) SOCIAL ANALYSIS AND PROJECT DESIGN IN THE AGENCY FOR INTERNATIONAL DEVELOPMENT; REVIEW RECOMMENDATIONS, GUIDELINES

Perrett, H.E.

1978, 79p.

Perrett (AID/otr-147-78-26)

Reviews current status of social analysis and project design in AID, identifies needed changes to improve performance and impact of social analysis, and presents draft guidelines. Discussed in this examination of current AID social analysis are the main problems of quality, timing and application and the constraints to improving social analysis (staffing, motivation, skill and knowledge, political, institutional). The author suggests that a new role for social analysis might be as an integrated process and enumerates institutional measures to aid the implementation of more explicit and detailed guidelines for social analysis. The proposed guidelines cover the following topics: (1) Country Development Strategy Statement (CDSS), (2) Sector Analysis or Assessment, (3) Project Identification Document, and (4) Project Paper. In general, the guidelines provide instructions for performing social analysis as an integrated activity at various stages of AID program and project work. Two annexes discuss specific types of projects-small farmer credit and primary education-in which social analysis can make a significant contribution and an additional annex lists illustrations of social analysis and design in AID project work.

PN-AAG-353

Paper copy \$9.88
Microfiche \$1.00

ECONOMICS

(053) REGIONAL COOPERATION IN THE MIDDLE EAST
A.I.D., Near East Bureau
1979, 158p.

AID/NE

Assesses prospects for regional cooperation in the Middle East, by covering economic and technical considerations involved in cooperation between Israelis and Arabs. Suggests moderate potential among Israel, Egypt, the West Bank and Gaza, and ultimately other Arab countries, arising out of common problems and needs. Believes opening contacts, lowering barriers, and lessening suspicions and hostilities will result in political and symbolic benefits. Thus far, suggestions for cooperation put forth have not proved viable. Also suggest that cooperation among nations cannot guarantee peace nor bring about economic benefits. Narrows on Israeli/Egypt dialogues since President Sadat's visit to Jerusalem in 1977, finding most proposals have not been subjected to economic or technical analysis and make overly optimistic assumptions. Notes Egyptians exhibit generally cautious receptivity to cooperation although Israelis embrace the idea with enthusiasm. Considers many areas of possible cooperation, including transportation, communications, water, energy, industry and mining, tourism. Offers lists of contractors and technical studies.

PN-AAG-610

Paper copy \$19.75
Microfiche \$2.00

ECONOMICS

(054) LOCAL INDUSTRIES, NON-AGRICULTURAL PRODUCTION AND EMPLOYMENT IN AGRICULTURAL REGIONS

Gibb, Arthur
1974, 42p.

AID/TA/RD

Analyzes the role of non-agricultural activity in a typical Agricultural Sub-Region in a developing nation. The basic agrarian economic unit in this study, the Agricultural Sub-Region, is essentially a subsector of the more standard analytical tool, the Agricultural Region. The Sub-Region is composed of numerous agricultural villages, five to eight locality towns, and a district town. The discussion is organized in six parts. The first describes local industries, emphasizing that their growth depends on growth in the agricultural section. Part II classifies local industries as either consumer-, public service-, or agriculture-related industries. In Part III, these industrial categories are characterized in terms of their use of labor and capital. The report's fourth part considers industries which serve a regional rather than a local market. The last two parts focus on developing appropriate policies for local industry: Part V offers recommendations for aiding the growth of local industries, and Part VI explains the role of local industries as policy variables in the larger context of an Agricultural Region. A bibliography and a glossary of basic terms pertaining to local industry supplements the text.

PN-AAD-812

Paper copy \$5.25
Microfiche \$1.00

(055) FACTOR CONTENT OF CONSUMPTION BY INCOME SIZE: SOME FURTHER EVIDENCE

Ho, Yhi-Min
1978, 34p.

Rice (AID/otr-C-1394 Res.)

(In Program of Development Studies. Paper no.90)

Examines validity and sensitivity of the hypothesis that

consumption pattern of the poor is more labor-intensive than that of the rich, using the Taiwan experience. Paper assesses whether contradictory findings relating to the factor-intensity proposition may be explained by differences in the degree of aggregation of consumption and production data. The hypothesis is tested using disaggregated production data on the basis of a two-way classification of manufacturing firms, by size. The paper also analyzes the sensitivity of the factor content of consumer demand to changes in technology and income distribution. Discusses findings obtained through simulations regarding the hypothesis that the poor's consumption mix has a higher employment content, and technological and distributional changes. The paper contains tables of relevant data and an appendix of additional tables.

PN-AAG-411

Paper copy \$4.25
Microfiche \$1.00

(056) A DISCUSSION ON NEEDED INPUTS TO FOSTER EMPLOYMENT GENERATION IN BARBADOS AND THE LDC'S

Burke, B.M.
1979, 72p.

Burke (AID/LAC-C-1320)

Discusses conditions and problems relating to business and job development in the Eastern Caribbean region. Interviews with local and enclave industry representatives revealed the most urgent, pervasive problems. Details lack of entrepreneurial skills, feasibility or marketing studies, management and accounting, financial management and credit, and problems of industrial discipline. Contains sections on the labor force, employment and occupational mix; review of local business development programs; industry's views on problems of business development; local assistance efforts; data availability; identified project needs and recommendations. Appendices include the Barbados Development Bank's small business loan selection criteria; note on Small Business Management Seminar, Antigua, 1979; description of proposed technical assistance courses including budget estimates; list of persons consulted for this report; and program from YORUBA-U.W.I. series, "Is there a future for black business?"

PN-AAG-497

Paper copy \$9.00
Microfiche \$1.00

(057) MID-EAST TRANSPORTATION STUDY; A SURVEY OF REGIONAL TRANSPORTATION REQUIREMENTS, STAGE I

U.S. Dept. of Transportation. Office of Int. Transportation Programs
1979, 169p.

AID/NE/PD

Identifies a number of Mid-East transport projects judged as economically viable and worthy of detailed prefeasibility and feasibility studies. Criteria used in evaluating projects were: extent to which they regionalized the transport system; extent of joint use or operation by two or more countries; magnitude of consequent economic benefits; and contribution to country's economic development. Transport projects were conceptualized under two alternative assumptions: continuation of political status quo and changed conditions following peace. Findings are based solely on data available in the U.S. Report examines current transportation facilities and possible growth in Egypt, Israel, Syria, Jordan and Lebanon. Discusses existing and potential trade and tourism; mineral resources, agriculture, and related transport requirements; and Middle East aviation cooperation. Appendices include original scope of work provided by AID/W; outline of Mid-East Transport Study; description of methodology; mineral resources

URBAN DEVELOPMENT

and transportation; trading patterns between Middle East countries; project briefs and maps; and bibliography of data sources.

PN-AAG-498

Paper copy \$21.13
Microfiche \$2.00

(058) DUALISM IN LDC MANUFACTURING: A CASE STUDY

Baily, M.A.
1978, 33p.

Yale (AID/otr-C-1326 GTS)

(In Center discussion paper no. 303)

Examines Colombian clay brick production as an example of a dualistic industry. Investigates extent to which this industry fulfills assumptions in the diffusion model and moves toward the equilibrium described by model. According to the diffusion model, development of the manufacturing sector takes place by expanding the modern sector and contracting and eventually eliminating the craft sector, as superior, modern technology diffuses throughout each industry. Contains a brief history of brick technology. Presents structure of the Colombian brick industry, market factors and relative productivity, by category of technology. Concludes that the diffusion model is not a good description of the clay brick industry, whose structure represents a long-term coexistence of modern and traditional technologies. Includes tables and figures of relevant data.

PN-AAG-510

Paper copy \$4.13
Microfiche \$1.00

(059) ASPECTS OF INTERNATIONAL LABOUR MIGRATION IN THE ARAB NEAR EAST: IMPLICATIONS FOR USAID POLICY

Birks, Stace; Sinclair, Clive
1979, 200p.

Birks (AID/ne-C-1593)

Investigates the implications of international migration of workers from low-income countries to high-income nations of the Arab Near East, in Maghrib, North Africa, the Nile Valley, the Levant, and the Arabian peninsula. Considers two factors to be of overriding significance: Widening gap between rich and poor Arab Near East countries and the likelihood of large-scale unemployment when workers return to poor countries after being discarded by richer countries. Predicts a turnaround in Arab world labor market as employment opportunities in rich states diminish rather than grow. Thus, employment of Arab migrant workers will fall sharply. Suggests implementation of regional labor market strategy to predict and stabilize labor flows. Believes efforts should be made to employ national remittances in broader rather than individual interests. This might be achieved by using banks for transfers, development bonds, and storing foreign exchange reserves for the future. Encourages the protection of indigenous agriculture and the return of migrant workers to native lands rather than preventing their departure to seek work in other countries.

PN-AAG-611

Paper copy \$25.00
Microfiche \$3.00

(060) AN ECONOMIC EVALUATION OF APPRENTICESHIP TRAINING IN WESTERN NIGERIAN SMALL-SCALE INDUSTRIES

Mabawonku, A.F.
1979, 73p.

Mich. State (AID/ta-CA-2)

(In African rural economy paper no. 17)

Analyzes the structure, conduct, and performance of the apprenticeship system in Nigeria, Africa. Focuses on the apprenticeship system as an institution for acquiring skills. Analyzes the economics of apprenticeship training by comparing returns from apprenticeship and trade school training. Makes recommendations for policies to train small entrepreneur, who are considered desirable in Nigeria. Findings of the study show that the apprenticeship system provides other sectors of the economy with skilled workers in addition to training new entrepreneurs. Considering the existing scarcity of skilled workers, the study suggests that training under the apprenticeship system be incorporated into national manpower policies. Believes that upgrading of small proprietors who train apprentices will benefit all industry. Moreover, proprietors who provide training for apprentices often subsidize apprentices and hence suffer a loss of earnings and, in effect, are transferring their income to other sectors of the economy. Finds also that trade centers created to train people to establish their own businesses are not fulfilling this objective. Rather, evidence from this study show a substantial majority of trainees enter large-scale industry or public institutions rather than establish their businesses. Reflects acute shortage of skilled in Nigeria and also the uncertainties of self-employment.

PN-AAG-616

Paper copy \$9.13
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URBAN DEVELOPMENT

(061) HOUSING FINANCE, URBAN LAND USE POLICY, HOUSING AND COMMUNITY UPGRADING FOR LOW-INCOME EGYPTIANS; SUMMARY REPORT

Joint Housing and Community Upgrading Team in Egypt;
Egypt. Ministry of Housing and Reconstruction
1977, 38p.

AID/SER/H

(Summary of comprehensive reports: PN-AAG-046; PNAAG047;
PN-AAG-048; PN-AAG-049)

Summarizes reports about housing in Egypt which document conditions, provide basic data, identify critical problems, and make recommendations for government action. Includes an overview of socioeconomic conditions for low-income families, an identification of target groups, and objectives of program policy and action. The institutional means for financing housing are described, and recommendations for housing problems are addressed. Factors contributing to the problem of availability and use of urban land are enumerated. Recommendation, including establishing and financing a land development agency, are offered. Also included is an account of house construction and financing activities in the informal settlement areas. Suggestions are made for developing demonstration projects for housing and community upgrading in several urban areas. In addition, a project to stimulate development of smaller towns--an effort to reduce migration to the cities--is described.

PN-AAG-126

Paper copy \$4.75
Microfiche \$1.00

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URBAN DEVELOPMENT

(062) PATTERNS OF URBAN—RURAL FERTILITY DIFFERENTIALS IN DEVELOPING COUNTRIES:

A SUGGESTED FRAMEWORK

Findley, Sally; Orr, A.C.

1978, 253p.

GE (AID/ta-C-1422)

Analyzes differences in urban and rural fertility patterns in less developed countries in order to understand the effect of urban and rural development programs on population growth. The study begins with a technical discussion of fertility rates in various areas, calculating urban/rural differentials according to country, mother's age, city size, and tempo of childbearing. A regression analysis is then presented to more rigorously analyze the relationship between fertility differentials and urbanization variables. Data for this section was obtained from 1970 censuses and fertility surveys. The second section examines theories of urban/rural fertility variations; theories take into account such possible influences on family size as mortality, health, education, and perceived cost-benefit of children. A framework is subsequently provided which specifies "place" and "person" factors which most strongly influence family planning decisions. The next section presents four case studies which use the above framework to examine urban/rural, intra-rural, and intra-urban fertility differences in Egypt, Peru, the Philippines, and Tanzania. The last section summarizes major conclusions of the study, offers recommendations for more effective implementation of family planning programs, and identifies areas for further research. Appendices provide supplementary research data, a glossary, and a bibliography.

PN-AAG-161

Paper copy \$31.63

Microfiche \$3.00

(063) GUIDELINES FOR ESTABLISHING AND ADMINISTERING LAND DEVELOPMENT AGENCIES IN THE DEVELOPING COUNTRIES

PADCO, Inc., Washington, D.C.

1973, 75p.

AID/DS/H

Examines the urban land crisis in LCDs from the perspective of the Land Development Agency (LDA), an instrument through which the public interest can be represented in the urban land market. Rapid urbanization in LDCs has fostered competition for urban land. This inflates prices, encourages land speculation, distorts urban development patterns, frustrates the public interest, and denies access to secure land tenure for the low-income urban population. This publication, part of the Ideas and Methods Exchange Series, reviews key issues of concern and recommendations and guidelines for the establishment and administration of LDAs. The public sector influences the private market primarily through three basic activities: administration such as applying the negative controls of zoning and building bylaws; taxation; and direct intervention e.g., the power of eminent domain. This report contains (1) an examination of the typology of land development agencies currently operating in the LDCs, (2) a discussion of special issues concerning the LDA, (3) identification of planning issues which need to be considered, and (4) suggestions regarding the legislative configuration of an LDA which will implement the key concepts. Bibliography included.

PN-AAG-361

Paper copy \$9.38

Microfiche \$1.00

(064) TUNISIA SHELTER SECTOR ASSESSMENT

Robbins, E.H.; Hammam, Sonia; Shimasaki, William; Strassmann, Paul; National Savings and Loan League, Washington, D.C.

1979, 141p.

NSLL (AID/otr-C-1453)

Assesses current conditions concerning the Government of Tunisia's efforts to increase low-cost housing production and to improve shelter conditions for low-income families. Contains discussions of country situation, economic overview, population characteristics, dimensions of the shelter problem, shelter delivery system, constraints to the steady increase in shelter programs for the urban poor, and analysis and recommendations. Suggests that the constraints of particular and immediate interest are of an institutional nature and that it is this aspect which offers the greatest opportunity for change and rapid improvement. Includes approximately 50 tables and figures of relevant data, as well as an appendix listing members of the National Commission on Housing, Urbanization and Construction, persons contacted in the conduct of this study, and a brief statement concerning concrete block production.

PN-AAG-412

Paper copy \$17.23

Microfiche \$2.00

(065) MOROCCO SHELTER SECTOR ASSESSMENT UPDATE

Jerome, Axel; Bluemmel, Peter; Berger (Louis) Int. Inc., East Orange, N.J.

1978, 104p.

Berger (AID/otr-C-1641)

Provides an updated shelter analysis for Morocco. Contains discussions of (1) country situation; (2) economic situation; (3) population characteristics; (4) dimensions of the shelter problem (including appendices on general housing characteristics, descriptions of traditional urban housing and present housing types, and environmental improvements); (5) shelter delivery system (including appendix on examples of costs); (6) constraints in the delivery system; (7) prospects and analysis (household and individual income trends and improving housing conditions for target population, prospects for national economy and shelter and urban development); and (8) options and recommendations. Includes also a statement concerning environmental control, a list of references, and a list of terms and abbreviations.

PN-AAG-413

Paper copy \$ no price

Microfiche \$2.00

(066) SUDAN SHELTER SECTOR ASSESSMENT

Jerome, Axel; Sandhu, Kul; Albin, Steve; House, Carl; Berger (Louis Int., Inc., East Orange, N.J.)

1978, 200p.

Berger (AID/otr-C-1641)

Provides information, analysis and recommendation concerning the shelter sector in Sudan, Northeastern Africa. Includes discussions and data on country situation, its geography, economy, population characteristics, employment and income. Shelter sector describes and analyzes government, current housing situation, projection of need, land, institution, construction sector, environmental protection, rural housing, concludes with recommendations of sources of encouragements and constraints. Examines the most important constraints affecting the shelter sector, among them affordability, lack of financing, projects administration, poor production and supply of building materials, and inadequate planning of housing projects. Appendices contain backup tables for analysis; data and discussion of the capital costs, share capital of the Estates Bank, financial statement of Public Electricity and Water Corporation, Sudanese Estates Bank Act, and a list of Sudanese officials and contractors contracted by study team.

PN-AAG-414

Paper copy \$25.00

Microfiche \$3.00

EDUCATION

(067) SWAZILAND SHELTER SECTOR ASSESSMENT

Rivkin, M.D.; Rivkin, G.W.; House, Carl; Feinberg, L.A.
1978, 277p.

Rivkin Assoc. (AID/otr-C-1636)

Presents information, analysis and recommendations relating to the shelter sector in Swaziland, southeast Africa. Background data covers the country situation in terms of geography, climate, economy, and population; government role in housing and urban development, housing in the Third Development Plan 1978-1983; and housing in Swaziland today with its housing stock, urban land, institutional framework, shelter finance, and construction industry. Later sections discuss shelter needs for 1978-1983 including household income, affordability, modification for home ownership, and capital requirements. Opportunities and constraints and recommendations to the Government of Swaziland, are included. This report takes into account views and comments of the government on a previous draft. Appendices include tables and figures, various explanatory notes, and a copy of the interview schedule used in the Mbabane-Manzini Rural-Urban Migration Study (Department of Economics, University College of Swaziland).

PN-AAG-415

Paper copy \$34.68
Microfiche \$3.00

SOCIAL SCIENCES

(068) CIVIL SERVICE DEVELOPMENT, GOVERNMENT OF LIBERIA; PROGRESS REPORT, APRIL-JUNE 1978

Calif. State Personnel Board. Sacramento, Calif.
1978, 63p.

Calif. Personnel (AID/afr-C-1088)

Reviews activities of the Liberian civil service from April to June, 1978. The report contains information on classification of staff, salaries, civil service tests, and staff training programs. A diagram illustrating the Liberian Civil Service's organizational structure is provided, as is the text of a proposed classification and pay plan for general Liberian civil service positions. This proposed plan specifies title, duties, salary range and qualification standards for a wide range of civil service positions involving the following types of work: plumbing, carpentry, masonry, electrical work, mechanics, painting, messenger, and drivers.

PN-AAG-091

Paper copy \$7.88
Microfiche \$1.00

(069) MAPPING FOR CENSUSES AND SURVEYS

1978, 367p.

Census/ISPC (RS/COM/BUCEN-04-75)

(For Workbook, 111p. PN-AAG-552) (In Statistical training document ISP-TR-3)

This manual, designed for use by officials and specialists engaged in planning and implementing censuses and surveys in their respective countries, sets forth guidelines and illustrative procedures for a mapping program. Materials are prepared and designed especially so they can be adapted for use by different countries. Opening chapters are directed toward administrators and supervisors of mapping programs. Other chapters discuss elements of map and aerial photography; technical aspects of drafting and reproducing maps; handling problem areas; mapping for sample surveys; and new developments such as satellite imagery and automated cartography. The final chapter offers a discussion of "statistical areas" of mapping.

PN-AAG-551

Paper copy \$45.88
Microfiche \$4.00

(070) MAPPING FOR CENSUSES AND SURVEYS;

WORKBOOK

U.S. Bureau of the Census. Int. Statistical Programs Ctr.
1978, 111p.

Census/ISPC (RS/COM/BUCEN-04-75)

(For Main report, 367p.; PN-AAG-551) (In Statistical training document ISP-TR-3W)

This statistical training document is designed for use as a workbook in training census takers. Study materials in this workbook complement the text and exhibits contained in the manual titled **Mapping for Censuses and Surveys**. Intends to clarify the concepts, considerations, practical applications, and, at the same time, reinforces the principles and procedures discussed in the manual. Workbook is designed so that pages can be removed and used as tests. Study materials are arranged by chapters in the same sequence as in the manual. Exercises consist of questions and computations, many of which are adaptations of concepts or techniques presented in the manual. A protractor, compass, and ruler are needed for selected computations. Questions require Yes/No answers, multiple choice, or written responses. Workbook published by the Bureau of the Census under a Resources Support Services Agreement with the U.S. Agency for International Development.

PN-AAG-552

Paper copy \$13.88
Microfiche \$2.00

EDUCATION

(071) STRUCTURES FOR FLEXIBILITY IN THE MANAGEMENT OF LEARNING SYSTEMS

Sem. on Year-Round Education, 9th, Washington, D.C., 1977
1977, 113p.

Clarion (AID/la-C-1197)

(In English and Spanish. Spanish, 92p.: PN-AAG-404)

Presents papers delivered at the 9th National Seminar on YearRound Education. Participants from the United States, Egypt, the Caribbean, and Latin America examine issues concerning flexibility in adapting educational programs to ensure quality education, economic efficiency, and compatibility with life styles and living patterns of the people served. Papers are organized around the following topics: utilization of community resources by the school resources by the community; organizing learning resource centers to facilitate learning; individualizing and personalizing instruction; current and future developments in year-round education; and developing criteria to determine feasibility of a procedures for adapting and implementing specific programs. Contains an overview of the conference, twenty individual papers, three composite summaries of sessions, and a list of seminar consultants and moderators.

PN-AAG-403

Paper copy \$14.13
Microfiche \$2.00

(072) APPLIED COMMUNICATIONS TECHNOLOGY IN RURAL DEVELOPMENT

Perrett, H.E.
1976, 76p.

AED (AID/ta-BOA-1060 GTS)

Discusses communications technology as a resource in planning, implementing, and evaluating a wide variety of development

EDUCATION

programs. Describes possibilities and limitations of communications technology, advantages and disadvantages of different media including radio, television, film, printed matter, folk media, social organizations, and environmental factors which aid in the choice of media. Contains section on issues involved in changing habits and practices of ultimate beneficiaries of development efforts. Examples of applications of communications technology to rural development in Philippines Rural Reconstruction Movement, health education in Tanzania and Indonesia, Basic Village Education Project in Guatemala, and others, are given. A checklist is offered for analyzing communications technology projects including factors of general planning, media selection, local organization, information flow and exchange, human factors, message content, and feedback and evaluation. Appendix suggests services that communications technology might perform. An annotated bibliography is included. PN-AAG-492 Paper copy \$9.50 Microfiche \$1.00

(073) PARAGUAY EDUCATION SECTOR ASSESSMENT, 1977

Moseley, S.F.; Swett, F.X.; Greenwood, C.R.; Acad. for Educational Development, Inc., New York 1977, 347p.

AED (AID/afr-C-1131 GTS)

Large, detailed study examines, evaluates, and drafts recommendations concerning the eleven-year educational reform program being carried out in Paraguay, South America. At the time of the study, the **Diagnostico Educativo** was in its eighth year of implementation. The educational reform program in Paraguay is based exclusively on changing the school curriculum. The study outlines a complex methodology for achieving curriculum changes through reforms in teacher training and retraining; production and distribution of textbooks and materials; regional education centers; educational radio; educational facilities planning and school maintenance; improved management, decision-making, and planning mechanisms; and education financing and economic analysis. Reform program, as outlined in the study, also seeks to make full use of non-formal education activities as well as informal learning and development. Provides a glossary of terms; ten charts including system structures, sources of funds, average weekly incomes by labor sector, educational attainment, sex; organization of regional education centers; and more than 100 tables.

PN-AAG-558 Paper copy \$46.75 Microfiche \$4.00

(074) THE RADIO MATHEMATICS PROJECT; NICARAGUA, 1976-1977

Suppes, Patrick; Searle, Barbara; Friend, Jamesine 1978, 365p.

Stanford (AID/CM/ta-C-73-40 Res.)

(Supplements and updates The Radio Mathematics Project; Nicaragua, 1974-1975, 274p.: PN-AAF-178)

Describes the design, implementation and evaluation of instructional radio used to teach primary-school mathematics in rural Nicaragua. Contains detailed discussions of the second-grade instructional program; formal evaluation of the 1976 first-grade instructional program; weekly tests; an assessment of teacher attitudes; an observation study in first-grade classrooms; radio education and student repetition; patterns of student promotion and wastage for first-graders; educational decisions and cost analysis for the radio mathematics project; and Nicaraguan standardization of the Stanford Mental Arithmetic Test (SMAT). Many figures and detailed data tables are included. The appendix contains symbolic and oral forms of arithmetic exercises; scripts

for SMAT in English and Spanish; manual for Nicaraguan MAT; and performance of first and fifth grade Nicaraguan and U.S. students on SMAT by concept. Key word(s) index provided.

PN-AAG-504 Paper copy \$45.63 Microfiche \$4.00

HEALTH & NUTRITION

(075) HEALTH SECTOR ASSESSMENT FOR BOLIVIA

AID/LA/USAID/Bolivia 1975, 510p.

AID/LA/USAID/Bolivia

This health sector assessment analyzes the status of sector activities in Bolivia and provides guidance for planning future USAID programs. This assessment process achieved: the involvement of Bolivian officials and technical personnel in the analysis and initial planning of sector activities and the participation of other donor organizations. It also achieved the documentation of baseline data, the provision of a single reference source for health information on Bolivia, and the development of a sector assessment methodology which could be beneficial to similar undertakings by other agencies. There are ten chapters; each begins with a summary statement. The first four provide background information on conditioning factors, health status, socio-economic impact, and the structure of the sector. The next three chapters are analytical and deal with sector programs, infrastructure, and intersectoral activities. The last three chapters describe the responses to the situation. The data is based on the information available due to the lack of a national census since 1950 and deficient health and management systems.

PN-AAE-654 Paper copy \$63.75 Microfiche \$6.00

(076) HEALTH CARE IN HAITI; DRUG INVENTORY AND SUPPLY SYSTEMS COMPONENT FOR THE ADMINISTRATIVE SYSTEMS IMPROVEMENT PLAN

Fusco, N.S.; Duchatelier, M.L.; Westinghouse Health Systems, Columbia, Md. 1978, 54p.

Westinghouse (AID/la-C-1179)

Contains two related reports on strengthening health care in Haiti: (1) medical logistics and supply component, and (2) drugs, logistics and supplies component for the development of the administrative system improvement plan. The first report presents an overview of the logistics and supply system of the Department of Sante Publique et de la Population which provides the mechanism for procuring and distributing drugs, medical supplies and related commodities. System deficiencies are summarized and possible solutions are offered. A section is appended on cost estimates for technical assistance, commodity support, communications, and staff for medical equipment maintenance. The second report describes present conditions of and recommendations for the acquisition and distribution of medical supplies: organization, storage facilities, current norms, purchasing, and technical assistance. Relevant organizational diagrams and cost estimate figures are provided.

PN-AAG-329 Paper copy \$6.75 Microfiche \$1.00

(077) HEALTH CARE IN HAITI: FINAL CONSULTANTS' ACTIVITIES REPORT

Westinghouse (AID/la-C-1179)

Reports the technical assistance activities of eight specialist

consultants for the Bureau of Health Planning and Evaluation in Haiti. Subject areas examined include health facilities, health planning, logistics systems, organization and management analysis, biostatistics, transportation, budget planning and analysis, and related topics. Each consultant's report provides information on objectives, dates and duration of consultation and interviewees. The reports also include a narrative description and a list of the reports and/or documents produced from the consultation.

PN-AAG-330

Paper copy \$5.63

Microfiche \$1.00

(078) HEALTH CARE IN HAITI; TRANSPORTATION COMPONENT REPORT FOR THE DEVELOPMENT OF THE ADMINISTRATIVE SYSTEMS IMPROVEMENT PLAN

Fusco, N.S.; Westinghouse Health Systems, Columbia, Md. 1977, 168p.

Westinghouse (AID/la-C-1179)

Contains two reports on strengthening health care in Haiti: (1) health transportation system and (2) integrated transportation system, transportation component, for the development of an administrative systems improvement plan. The first presents initial observations concerning transportation for Haiti's health system and discusses a proposed merger of three separate systems: the Division of Public Health and Population (DSPP), the National Society for Endemic Diseases (SNEM), and the independently used vehicles of the International Organization. The Appendix provides a description of the DSPP unit and cost derivations for the proposed integrated system.

The second report specifies how existing transportation resources could be combined with additional inputs to develop a cohesive system to serve Haiti's health system. A five-year plan (1979-1983) for the implementation of the unified system is outlined. The bulk of the report considers various functional parts of the transportation system separately: (1) garage and transportation, (2) warehousing for spare parts, (3) garage complex, (4) garage maintenance, (5) gasoline storage and distribution, (6) spare parts, and (7) acquisition and cost of equipment. Organizational charts and other related figures, as well as copies of administrative documents, are included.

PN-AAG-331

Paper copy \$21.00

Microfiche \$2.00

(079) THE ROLE OF TRADITIONAL MIDWIVES IN THE MODERN HEALTH SECTOR IN WEST AND CENTRAL AFRICA

Jett, Joyce
1977, 154p.

Jett (REDSO/WA-76-81)

Reports major trends and constraints concerning the training and utilization of traditional birth attendants (TBAs) in five African countries (Senegal, Mali, Niger, Upper Volta, Cameroon). Each country is discussed separately in regard to demography, health facilities and personnel. Also included is information on the roles and training of midwives, and relationships between the traditional and modern health sectors. All five countries share similar problems in the rural health sector: shortage of qualified health personnel and facilities; unequal distribution favoring urban areas; and underutilization of existing facilities and personnel in rural areas. Although a trend to expand TBA training programs is indicated, various obstacles must be considered. These include government attitudes toward TBAs, attitudes of health professionals, attitudes of TBAs toward training, conflict between traditional and modern health sectors, and various problems with the content and methods of training programs. A set of guidelines

for integrating traditional midwives into the modern health sector is provided. Recommendations are made regarding the expansion and dissemination of knowledge about TBAs and evaluation methods.

Appended in French, are outlines for existing TBA training courses. Thirty-seven references to general works on the topic, and additional references specific to the five countries are given in French and English. Also listed are the names of the author's personal contacts in the five countries.

PN-AAG-344

Paper copy \$19.25

Microfiche \$2.00

(080) HEALTH CARE IN HAITI: A MANUAL OF STATISTICAL NORMS, PROCEDURES AND FORMS FOR DSPP (DEPARTMENT DE LA SANTE PUBLIQUE ET DE LA POPULATION)

Westinghouse Health Systems, Columbia, Md. 1978, 215p.

Westinghouse (AID/la-C-1179)

Details the operating plan for reorganizing health data collection and analysis system, which supports regional and central health planning activities in Haiti. Begins with material on the legal foundation and general functions of the Statistics Central Section, Department of Public Health and Population. Includes discussions of the organization of statistics services, equipment and personnel resources of health institutions such as hospitals, health centers, dispensaries. Various stages of the process of medical attention provided to a patient are described. Also includes lists of definitions of medical/health terms and health indexes, as well as methods of calculating and recording vital statistics and other health information, according to international classification proposed by WHO. Appended are lists of forms used to compile health statistics at the institutional level and within the medical record; and forms used by regional and central statistics offices to collect data.

PN-AAG-366

Paper copy \$26.88

Microfiche \$3.00

(081) HEALTH CARE IN HAITI; REORGANIZATION AND STAFFING PLAN FOR THE BUREAU OF HEALTH PLANNING

Westinghouse Health Systems, Columbia, Md. 1978, 43p.

Westinghouse (AID/la-C-1179)

Contains three documents pertaining to the organization and staffing and training of the Bureau of Health Planning and Evaluation, Haiti. The first specifies goals, objectives, activities, and staff skills requirements and includes an organizational diagram of the bureau. The second details qualifications and job descriptions for two technical staff positions, vacant as of May 1977, and subsequently filled. The third document contains descriptions of all present (Summer 1978) staff positions in terms of current and envisioned tasks. Staff positions include chief, assistant chief/public health physician, advisor, nurse, demographer, health economist, administrator/accountant, bilingual secretary, and secretary.

PN-AAG-367

Paper copy \$5.38

Microfiche \$1.00

(082) SIERRA LEONE NATIONAL NUTRITION SURVEY; FINAL REPORT

Calif. Univ., Los Angeles. School of Public Health 1978, 249p.

Calif. --LA (AID/ta-C-1240)

(Summary report, 23p.: PN-AAG-483)

Assesses the nutritional status of young children and their mothers

HEALTH & NUTRITION

in Sierra Leone, in Africa. Compares nutritional status between selected areas and provides information about the relationships among diet, socio-economic, health, and demographic factors with nutritional status. Data sources include anthropometry, clinical signs, haemoglobin assessment, interviews, laboratory tests, and thin blood films. Contains background information on climate, education, agriculture, fish and livestock, health, and previous nutritional studies. Survey design and methodology, as well as indices of malnutrition, are provided. Survey results and analysis, associations of undernutrition with household, family and child characteristics, are listed along with laboratory and dietary investigations. Also includes more than 100 tables and figures of relevant data. Appendices provide additional information concerning the survey design, methodology, and procedures; laboratory results; dietary tables; and anthropometric reference data.

PN-AAG-482

Paper copy \$31.13
Microfiche \$3.00

(083) PROCEEDINGS AND PAPERS OF THE INTERNATIONAL CONFERENCE ON WOMEN AND FOOD, VOL. II

Int. Conf. on Women and Food, Tucson, Ariz., 1978; Consortium for Int. Development
1978, 228p.

AID/WID

(Vol. I, 192p.: PN-AAG-053; Vol. III, 233p.: PN-AAG-531)

Contains session summaries and papers presented at the International Conference on Women and Food. Summaries for the six sessions, include: (1) clarifying problems of developing countries in meeting basic food/water needs; (2) women's involvement in alternative types of current AID food/nutrition projects; (3) national food production/distribution systems; (4) effects of women's activities in the food/nutrition situation in developing countries; (5) role of financial institutions in facilitating full participation of women in food/nutrition programs; and (6) implementing the World Food Conference resolution on women and food and improvement of private and governmental programs. Various papers, workshop group recommendations, and voluntary group/individual recommendations appear under the relevant session headings. Includes paper, "An Illustrative Developing Country Strategy for Meeting Basic Food/Nutrition Needs," together with a summary of the paper. This volume is one of three reporting the conference proceedings and papers.

PN-AAG-530

Paper copy \$28.50
Microfiche \$3.00

(084) PROCEEDINGS AND PAPERS OF THE INTERNATIONAL CONFERENCE ON WOMEN AND FOOD, VOL. III

Int. Conf. on Women and Food, Tucson, Ariz., 1978; Consortium for Int. Development
1978, 233p.

AID/WID

(Vol. I, 192p.: PN-AAG-053; Vol. II, 228p.: PN-AAG-530)

Contains four appendices and constitutes the third in a series of volumes reporting the proceedings and papers of the International Conference on Women and Food. Appendix A includes 10 background papers concerning malnutrition in developing countries, the role of women in agriculture, and development strategies regarding food and nutrition. Ten volunteered project proposals make up Appendix B. Proposal topics include the role of women in rural development and agricultural production in Asia and Africa; a preventive health plan in Yemen; natural resources, pig development, and food production projects in Niger, Belize,

and the Papago Reservation in southern Arizona; and others. Appendix C contains various documents; Women and Food; The World Food Conference; The Right to Food Resolution, U.S. Senate 1976; Women in Development Policy, USAID; Title XII: Famine Prevention and Freedom From Hunger; Foreign Assistance Act as Amended; and Plan of Action for the Integration of Women in Development in Africa: U.N. Economic Commission for Africa. Appendix D lists conference participants.

PN-AAG-531

Paper copy \$29.13
Microfiche \$3.00

(085) THE NUTRITIONAL SITUATION IN SIERRA LEONE

Kolasa, K.M.
1978, 99p.

Mich. State (AID/DSAN-C-0008)

Presents information and data compiled after 1974 on the nutritional status and food behavior of citizens in Sierra Leone, Western Africa. Concentrates mainly on children under five with some data on pregnant and lactating women, owing to the fact that these groups are most likely receiving formal medical assistance. Study relies on available data with some direct observations made by the research team. Concludes that malnutrition in children under five represents major nutritional problem, with about 30 per cent of children found to be underweight. Appears that the nutritional status of children under five has changed little since 1964. Believes that pregnant women in Sierra Leone are under nutritional peril, although it is not clear whether availability of food, taboos, or other reasons affect the food intake of these women. Suggests a lack of calories represents the primary nutritional problem among working adults, although some obesity has been observed in both rural and urban areas of the country. Study provides wide selection of interviews, professional opinions, papers, and Sierra Leone National Nutrition Survey Questionnaire, as well as extensive lists of figures and tables.

PN-AAG-612

Paper copy \$12.38
Microfiche \$2.00

SCIENCE & TECHNOLOGY

(086) PROGRAMS OF THE BOARD ON SCIENCE AND TECHNOLOGY FOR INTERNATIONAL DEVELOPMENT; SUMMARY OF ACTIVITIES, 1970-1978

National Research Council. Board on Science and Technology for Int. Development
1978, 348p.

AID/TA/OST

Summarizes the activities of the National Academy of Sciences' Board on Science and Technology for International Development (BOSTID) in 24 Countries in Africa, Asia and Latin America. BOSTID's programs involve collaboration with counterpart organizations in LDCs and are addressed to the use of science and technology in social and economic development. Descriptive summaries on overseas programs focus on major development sectors and include problems associated with agriculture, industrialization, and the use of natural resources. Activities of the Advisory Committee on Technology Innovation (ACTI) are reported on applying current technology to immediate problems of LDCs and accelerating the scientific advance-potential application progression. Also presented are summaries of special studies and advisory panels.

A brief section is included on the organization and activities of the Board itself, evaluation of BOSTID's program, program

development and follow-up, and Board-related activities. Reports and publications from the various programs are listed, as well as program participants—including Board members, staff and panelists—by country, activity, and nationality.

PN-AAG-332

Paper copy \$43.50

Microfiche \$4.00

(087) INDUSTRIAL RESEARCH AND SCIENCE AND TECHNOLOGY FOR DEVELOPMENT; A WORKSHOP IN PREPARATION FOR THE 1979 U.N. CONFERENCE

Sangster, R.C.; Copeland, B.K.; Workshop on Industrial Research and Science and Technology for Development, Arlington, Va., 1978

1978, 61p.

ISTI (AID-DSAN-147-641)

Reports discussions, remarks, and papers from a workshop held in preparation for the UN Conference on Science and Technology for Development. Workshop focuses on fundamental issues affecting present and potential linkages between corporate research and development organizations and the developing countries. Contains sections on background overview with excerpts from several papers; highlights of workshop discussions with transcribed quotations from participants arranged according to ten "action conclusions;" summary of plenary session; and U.S. industrial research and development for international development in the form of a background position paper containing a list of problem areas and a list of areas of technological and scientific LCD need.

PN-AAG-441

Paper copy \$7.63

Microfiche \$1.00

(088) EGYPTIAN DEVELOPMENT AND THE POTENTIAL ROLE OF SCIENCE AND TECHNOLOGY, VOL. I

Clark, C.W.; Evans, D.D.; Lewis, D.B.; Lindsey, Q.W.; Stannett, V.T. Research Triangle Institute, Research Triangle Park, N.C. 1976, 106p.

RTI (AID/afr-C-1144)

(Vol. II, 238p.: PN-AAG-444)

Assesses feasibility of U.S. assistance program for the scientific and technological community of Egypt. This report, one of two volumes, summarizes observations, assessments, conclusions, and recommendations of the research team. Contains sections concerning development strategy and scientific and technological resources; importance of research results to intermediate and final users; influence of Egyptian Academy of Scientific Research and Technology and related institutions; and recommendations for a joint Egyptian-U.S. program in science and technology, assistance to the Academy and the National Research Center, Cairo University and public sector projects. Includes relevant tables and figures, as well as a glossary of terms.

PN-AAG-443

Paper copy \$13.25

Microfiche \$2.00

(089) EGYPTIAN DEVELOPMENT AND THE POTENTIAL ROLE OF SCIENCE AND TECHNOLOGY, VOL. II

Clark, C.W.; Evans, D.D.; Lewis, D.B.; Lindsey, Q.W.; Stannett, V.T. Research Triangle Institute, Research Triangle Park, NC 1976, 238p.

RTI (AID/afr-C-1144)

(Vol. I, 106p.: PN-AAG-443)

Contains documents of a proposed U.S. assistance program for the scientific and technological community of Egypt. One of two volumes, this report compiles information supplied by the

Academy of Scientific Research and Technology, The National Research Centre, U.S. AID, and other organizations. Organization projects and activities of the Academy and the National Research Centre, are discussed. Describes other Egyptian science and technology institutions including Institute of Oceanography and Fisheries, Institute of Astronomy and Geophysics, Egyptian petroleum Research Institute, and National Institute for Standards. Also includes a project identification document (Technological Research and Development Project-Egypt); statement concerning U.S. National Science Foundation research applied to national needs program; summary of National Science Foundation report on instrument requirements; and description of the Scientific Instrument Center, in Cairo. Annexes include membership and organization of the Egyptian scientific and technological community; list of Academy research projects and description of selected projects; list of scientific and cultural agreements between the Academy and foreign countries; lists of first, second, and third priority equipment for the National Research Centre; and tentative budget for "More and Better Food" project equipment.

PN-AAG-444

Paper copy \$29.75

Microfiche \$3.00

(090) PROGRAMMATIC AREAS FOR U.S. ASSISTANCE FOR ENERGY IN THE DEVELOPING COUNTRIES

Palmedo, P.F.; Nathans, Robert; Beardsworth, Edward; Tschannerl, Gerhard; Brookhaven National Laboratory. National Ctr. for Analysis of Energy Systems

1978, 135p.

BNL (AID/PA/ERDA/TAB-995-18-76)

(Companion report to Brookhaven study "Energy needs, uses and resources in developing countries," 165p.: PN-AAF-300) (In BNL 50890)

Identifies 28 programmatic areas for U.S. assistance activities concerning energy problems in developing countries. In each area specific projects and estimates of funding are indicated. Majority of areas, 22, cover the development of conventional and renewable energy resources and technologies the remaining six areas involve assessment and planning, energy institutions, and training and education. Two hypothetical overall assistance programs are described with possible project distributions encompassing some 20 countries. Sections of the report include energy problems of LCDs, energy consumption and supplies, and rationale for U.S. assistance; energy assistance: past and future; recommended programmatic energy resources and technologies, infrastructural and cross-cutting programs; and developing a U.S. energy assistance package including allocation of funds and final remarks regarding the energy problem in most non-OPEC developing countries. Appended are descriptions of non-U.S., international and national, donor energy assistance programs.

PN-AAG-484

Paper copy \$16.88

Microfiche \$2.00

(091) DEVELOPMENT AND TESTING OF THE ROBOVALVE; FINAL REPORT

Sternberg, Y.M.; Knight, Robert

1978, 76p.

Maryland (AID/ta-C-1461)

Reports the development and testing of the robovalve, made of polyvinyl chloride, for use in LDCs. This faucet valve was developed to meet specific requirements: low cost, capable of local manufacture, essentially leak-proof, suitable for use in both public and private hydrants, selfclosing, absolute minimum of moving parts, parts which have insignificant monetary value and therefore

SCIENCE & TECHNOLOGY

not subject to pilferage. Contains description of the robovalve; discussions of experimental work; manufacturing process for the robovalve; and conclusions and recommendations. Includes illustrations and tables enumerating wear characteristics and leakage. Appendices provide review of plastic and elastomer materials, working drawings of public and household robovalves and a plastic water container, and series of photographs of robovalves.

PN-AAG-485

Paper copy \$9.50
Microfiche \$1.00

(092) ENVIRONMENTAL AND NATURAL RESOURCE MANAGEMENT IN DEVELOPING COUNTRIES; A REPORT TO CONGRESS. VOL. I: REPORT

Shane, J.N.; Middleton, D.C.; Ostrowsky, L.S.; Library of Congress. Science and Technology Div. 1979, 196p.

LC (PA/ZA/DSB-000-01-79)

(Vol. II; Appendix, 130p.: PN-AAG-507)

Identifies and analyzes environmental and natural resource problems of developing nations. Based on data from AID Missions, field experts, and a review of documentary material. Begins with general discussion of environmental and natural resource problems and prospects for developing food, energy, and water resources as well as sanitation and health. Indicates prerequisites to effective management: the institutional dimension. Regional assessments Africa, Asia, Latin America, and the Near East contain sections on environmental and natural resource problems; and institutional framework and/or capability for environmental and natural resource management, considering government commitment, government agency structure and administration, laws and regulations, data gathering and research, education, bilateral and multilateral arrangements, nongovernment organizations. Lists more than 250 items, organized by region, in bibliography. Note on contributors and methodology is appended.

PN-AAG-506

Paper copy \$24.50
Microfiche \$2.00

(093) ENVIRONMENTAL AND NATURAL RESOURCE MANAGEMENT IN DEVELOPING COUNTRIES; A REPORT TO CONGRESS. VOL. II: APPENDIX

Bauman, Fred; Library of Congress. Science and Technology Div. 1979, 130p.

LC (SA/TOA-01-77)

(Vol. I: Report, 196p.: PN-AAG-506)

Contains environmental reports for Sri Lanka, formerly Ceylon, and Mauritania, in Northwestern Africa. This volume is an appendix to Environmental and Natural Resource Management in Developing Countries, Vol. I: Report. Both reports are similarly organized with sections on population characteristics, including rural-urban distribution, education, and health; organizations involved in environment and natural resource activities, such as national governments, international bodies, non-government agencies; legislation regarding environment and natural resources; resources such as water, forests, soil, wildlife, fish and marine life, minerals; and the national economy as related to the environment. Contains lists of references and tables and figures of relevant data. In addition, the Sri Lanka report appends a list of animals protected under the Fauna and Flora Protection Ordinance and a list of national committees for the Man and the Biosphere Programme.

PN-AAG-507

Paper copy \$16.25
Microfiche \$2.00

(094) THE TECHNOLOGICAL AND KNOWLEDGE BASE FOR INDUSTRIALIZING COUNTRIES; PROCEEDINGS OF THE NBS/AID UNCSTD SEMINAR GAITHERSBURG, MD. 1978

Sangster, R.C.; UN Conference on Science and Technology for Development (UNCSTD) 1979, 240p.

NBS (AID/PA/TACCE)-06-71)

(In NBS special publication 543)

Contains paper and discussions for eight sections of seminar which explored needs for technological knowledge base for industrializing countries. Recommends procedures for acquiring and applying knowledge base. Proceedings provided background material for preparation of U.S. positions at UN Conference on Science and Technology for Development. Section topics include: measurement capabilities and services required by technological industry; national and international standards to be met by industrializing nations; knowledge required for industrial quality control; managerial responsibilities and technological; knowledge required for acquiring commercial industrial technology; and guidance for the U.S. in UN Conference on Science and Technology for Development. More than 30 individual papers, representing industrializing experience in Asia, the Near East, Africa, and Latin America and approximately 15 discussions, are contained in this volume. Appendices contain a copy of the seminar program and list of participants.

PN-AAG-539

Paper copy \$30.00
Microfiche \$3.00

(095) THE RELEVANCE OF AT DEVELOPMENTS IN THE U.S. TO THE THIRD WORLD; A COMPENDIUM OF U.S. AT ORGANIZATIONS

Smith, F.W. 1979, 163p.

AID/DS/ST

Reports on Appropriate Technology (AT) movement in the United States and its meaning to Third World nations. Emphasizes that AT holds no panacea because of limitation in applying American technology to other cultures. Points out that U.S. and European AT movements differ significantly from origins of this movement in the Third World. Reports that roots of U.S. AT movement may be found in disillusionment with science and technology as evidenced by urban crime, pollution, fear of nuclear holocaust, economic deprivation, unemployment, etc. On the other hand, Third World AT movement is founded on meeting human needs: food, housing, clothing, transportation, health, and communications. Generally accepted goals of AT summarized as environmental, social, and economic. Cites four aspects of AT stressed by U.S. groups: People must be involved; Location specific, or carefully designed to meet local conditions; Holistic in its approach; and finally, Futuristic, or signal where people want to be in the future.

PN-AAG-598

Paper copy \$20.38
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Please use the publication number in ordering.
Example: PN-AAB-000

(096) AN ANNOTATED BIBLIOGRAPHY OF AGRICULTURAL DEVELOPMENT IN JAMACIA

Erickson, F.A.; Erickson, E.B.
1979. 203p.

AID/LAC/DR/RD

Covers selected aspects of agricultural development in Jamaica. This annotated bibliography is organized according to the following subject classification and starts with Jamaica and Region: Overall Economy and Regional Agriculture. The bibliography continues with the following agricultural sub-topics: (1) Socio-Economic Characteristics, Overviews; (2) Surveys, Censuses, Statistics; (3) Extension, Education, Organizations; (4) Land, Natural Resources, Credit; (5) Markets, Marketing; (6) Technology, Techniques, Research; (7) Policy and Planning; (8) Projects; (9) Commodities, (10) Nutrition; and (11) Bibliographies and Proceedings. Only a selection of the technical literature has been made, and that which was considered narrowly agronomic, omitted. Each item is entered in its major subject matter category and the abbreviations for other relevant subject headings are noted in the margin. Contains over 850 entries in English. Most material was published on or later than 1962.

PN-AAG-364

Paper copy \$25.38
Microfiche \$3.00

(097) AGRARIAN REFORM IN BRAZIL: A BIBLIOGRAPHY. PART II: REGIONAL DEVELOPMENT

Wis. Univ. Land Tenure Ctr.
1978, 48p.

Wis. (CSD-2263 211(d))

(Supplement to Agrarian reform in Brazil: a bibliography, 1972, 155p.; PN-RAA-886) (In LTC Training and methods ser., no. 19, suppl.)

Supplements the bibliography on agrarian reform in Brazil by the Land Tenure Center Library. Contains a brief section entitled "Regional Development", followed by sections arranged by regions of Brazil and the sub-sections Agriculture, Colonization, and Economic Policy. 569 items; some in Portuguese, some in English. Most items published in the late 1960's and early 1970's.

PN-AAG-373

Paper copy \$6.00
Microfiche \$1.00

(098) BIBLIOGRAPHY OF PUBLICATIONS AND WORKING PAPERS IN AGRICULTURAL ECONOMICS AT IRRRI

IRRI
1978. 13p.

IRRI (AID/ta-G-1074 GTS)

This bibliography contains the publications and working papers in Agricultural Economics at IRRRI for 1977 and 1978, and earlier papers that are still available. Articles are arranged in reverse chronological order by subject. Monographs indicated below are listed by individual papers. Most of these papers have previously appeared as Department or working papers. As a rule, papers that substantially duplicate each other are listed only once.

A report of the Department's work is included in the Institute's Annual Report. Copies for 1967, 1969, 1970, 1972, 1973, 1974, 1975 and 1976 are available and may be obtained upon request. These provide a brief summary of the significant work of the Department.

Papers are arranged according to the following subject classification:

- I. Monographs
- II. Output Growth

- III. Policy
- IV. Socio-economic Structure
- V. Research Strategy and Benefits
- VI. Current Situation
- VII. Statistics and Data Collection

Copies of available articles may be obtained by writing to the Department of Agricultural Economics, IRRRI, P.O. Box 933, Manila, Philippines.

PN-AAG-357

Paper copy \$1.63
Microfiche \$1.00

(099) INTERNATIONAL BIBLIOGRAPHY ON CROPPING SYSTEMS, 1976

Ramos, M.M.
1978. 193p.

IRRI (AID/ta-G-1074 GTS)

(Supplements Int. Bibliography on Cropping Systems 1973-1974, 333p.; PN-AAC-913; and Int. Bibliography on Cropping Systems, 1975, 114p. PN-AAF-460)

Supplements and updates through 1976 the International Bibliography on Cropping Systems, 1973-74. More than 1500 items are according to the following categories: general works; physiology and biochemistry; crop ecology and meteorology; crop varieties and breeding; agronomy; soils; fertilizers; irrigation, drainage, water management, and crop water requirements; mechanization; plant protection; economic aspects; and social aspects. Includes a list of abbreviations of serial titles, an author index, and an extensive key work(s) index. Primarily in English; foreign titles translated into English.

PN-AAG-493

Paper copy \$24.13
Microfiche \$2.00

(100) HOUSING IN THE DEVELOPING WORLD: SUMMARY AND BIBLIOGRAPHY

Christian, J.W.; Perta, J.M.; National Savings and Loan League, Washington, D.C.
1978. 48p.

NSLL (AID/otr-C-1453)

Summarizes the content of Georgetown University graduate course on housing in the developing world. Contains section on dimensions of the shelter problem in terms of population growth and immigration, housing stock, infrastructure, environment and health conditions. Economic considerations such as economic framework and economic effects of housing investment, are discussed. The shelter delivery system, taking into consideration land and construction, infrastructure, technology, building materials, construction labor and management housing finance, effects subsidization, national policies and international assistance, is discussed. Selected bibliographies are provided with each section.

PN-AAG-500

Paper copy \$6.00
Microfiche \$1.00

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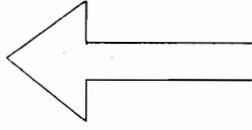
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