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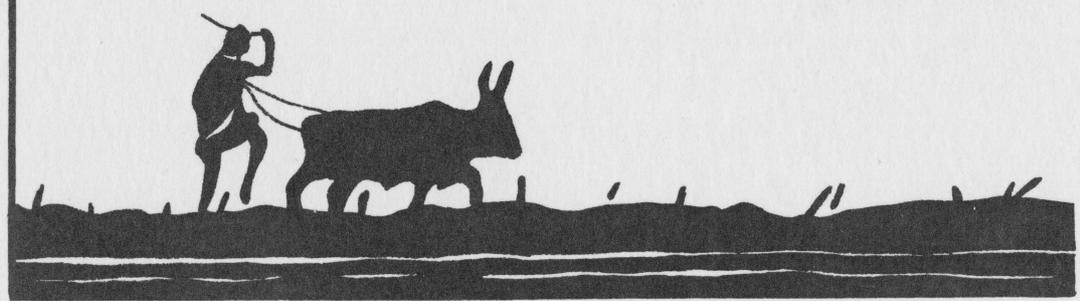
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A FARMING SYSTEMS RESEARCH BIBLIOGRAPHY OF KANSAS STATE UNIVERSITY'S VERTICAL FILE MATERIALS: 1990 SUPPLEMENT
Tod L. Meyn and Nancy Donoghue
Compilers and Editors
Paper No. 4S2
(Supplement Two to the Revised Edition)
Fall 1990

FARMING SYSTEMS RESEARCH PAPER SERIES



RESOURCES ON DEVELOPING COUNTRIES

KANSAS STATE UNIVERSITY MANHATTAN, KANSAS 66506 U.S.A.

A FARMING SYSTEMS RESEARCH
BIBLIOGRAPHY OF KANSAS STATE
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Manhattan, Kansas 66506
USA

FARMING SYSTEMS RESEARCH PAPER SERIES

Kansas State University's Farming Systems Research (FSR) Paper Series is supported by the U.S. Agency for International Development Title XII Program Support Grant. The goal of the Program Support Grant is to increase the University's ability to implement Title XII agricultural and nutritional development assistance programs in developing countries. This paper series is maintained by the FSR Program Associates -- a multidisciplinary team of professors who are aiming their activities at applied research on farming from a systems perspective.

The purpose of the FSR Paper Series is to disseminate information on FSR. Publication categories include updated bibliographies from KSU's FSR data base; proceedings from KSU's FSR Systems Symposium; selected papers presented in KSU's FSR Seminar Series; and selected papers prepared by KSU's Program Associates.

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Vernon C. Larson
Director
International Agricultural Programs

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"a complicated, interwoven mesh of soils, plants, animals, implements, workers, other inputs and environmental influences with the strands held and manipulated by a person called the farmer who, given his [or her] preferences and aspirations, attempts to produce output from the inputs and technology available to him [or her]. It is the farmer's unique understanding of his immediate environment, both natural and socio-economic, that results in his [or her] farming system."

It goes on to describe FSR as:

"research (including training) which: (1) is conducted with a recognition of and focusing towards the interdependencies and inter-relationships that exist among elements of the farm system, and between these elements and the farm environment; and (2) is aimed at enhancing the efficacy of farming systems through the better focusing of agricultural research so as to facilitate the generation and testing of improved technology.

"The major activities involved in FSR are:

- (a) The collection and analysis of base data;
- (b) The study of existing farming systems;
- (c) The design of new farming systems;
- (d) Farm systems experimentation; and
- (e) The evaluation and monitoring of new farming systems."¹

THE SUPPLEMENT . . .

is the result of the KSU Farming Systems Research Program's ongoing documentation effort, and lists FSR vertical file material and selected publications with Library of Congress classification numbers found within KSU's Farrell Library. A complete listing of FSR documents at KSU cited prior to this supplement can be found in the following two previously issued bibliographies:

Graham, Gretchen A., ed. A Farming Systems Research Bibliography of Kansas State University's Vertical File Materials (Revised). Farming Systems Research Paper Series no. 4. Manhattan, Kan.: Resources on Developing Countries, Farrell Library, Kansas State University. 1986.

Young, Noel D. and Elsa Eaton, eds. A Farming Systems Research Bibliography of Kansas State University's Vertical File Materials: Some Selections from the Peter E. Hildebrand Collection, Part One. Farming Systems Research Paper Series no. 4S1 (supplement 1 to the rev. ed.). Manhattan, Kan.: Resources on Developing Countries, Farrell Library, Kansas State University. 1988.

Two other bibliographies in the FSR Paper Series are:

Young, Noel D. and Tod L. Meyn, comps. and eds. Women in Development: Selections from Kansas State University's Vertical File Materials. Farming Systems Research Paper Series no. 21. Manhattan, Kan.: Resources on Developing Countries, Farrell Library, Kansas State University. 1989.

Young, Noel D. and Tod L. Meyn, comps. and eds. Botswana and Bechuanaland Items Held in Farrell Library: A Compendium of Books, Documents, Reports, Journal Articles, and Fugitive Literature, Part One. Farming Systems Research Paper Series no. 20. Manhattan, Kan.: Resources on Developing Countries, Farrell Library, Kansas State University. 1989.

The vertical file material includes unpublished papers, drafts, house organs and other non-conventional items. Keyword, title and primary author indices are provided. The standard for keywording is an "enhanced" CAB Thesaurus. Those items marked with a "++" in the location code have not yet been assigned a Library of Congress classification number.

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Nancy Donoghue
Librarian
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ABBREVIATIONS, ACRONYMS, AND INITIALISMS

| | |
|-------------|--|
| AAAS | American Association for the Advancement of Science |
| AABGA | American Association of Botanical Gardens and Arboreta |
| ACDI | Agricultural Cooperative Development International |
| ACIAR | Australian Centre for International Agricultural Research |
| AD | Agricultural Administration |
| ADB | Asian Development Bank |
| ADC | Agricultural Development Council |
| ADNP | Agricultural Development Ngamiland Project |
| AFTRCW/UNEC | African Training and Research Centre for Women/United Nations Economic Commission for Africa |
| AHS | American Horticulture Society |
| AIA | Agricultor-Investigacion-Agricultor |
| AICRPDA | ? |
| AID/S&T | Agency for International Development/Bureau for Science and Technology |
| AID | Agency for International Development |
| ALDEP | Arable Lands Development Program |
| APCWD | Asian and Pacific Centre for Women and Development (Bangkok, Thailand) |
| ASA | American Society of Agronomy |
| ASAE | American Society of Agricultural Engineers |
| ASPAC/FFT | Food and Fertilizer Technology Center of the Asian and Pacific Region |
| ASTA | American Seed Trade Association |
| ATIP | Agricultural Technology Improvement Project (Botswana) |
| AVRDC | Asian Vegetable Research and Development Center |
| BAEP | Bureau of Economic Analysis and Planning |
| BARC | Bangladesh Agricultural Research Council |
| BIFAD | Board for International Food and Agricultural Development |
| BDPA | Bureau pour le developpement de la production agricole |
| c | copyright |
| C.I.A.T. | Centro de Investigacion Agricola Tropical (Bolivia) |
| CAEP | Caribbean Agricultural Extension Project |
| CARDI | Caribbean Agricultural Research and Development Institute (U. of the West Indies) |
| CATIE | Centro Agronomico Tropical de Investigacion y Ensenanza |
| CATIE/ROCAP | Centro Agronomico Tropical de Investigacion y Ensenanza/Regional Office for Central American Programs |
| CDR | Centre for Development Research |
| CENDA | Centro de Desarrollo Agropecuario (Zona Norte) |

| | |
|---------------|---|
| CENDERCO | Centro para el Desarrollo Rural y Cooperativo |
| CENDHARRA | ? (San Juan, Rizal, Philippines) |
| CENTA/BID | Centro Nacional de Tecnologia Agropecuaria/? (El Salvador) |
| CENTA | Centro Nacional de Tecnologia Agropecuaria |
| CEPAL | Economic Commission for Latin America (Santiago, Chile) |
| CES | Cooperative Extension Service (U.S.) |
| CGIAR | Consultative Group on International Agricultural Research |
| CIAR | Centro Internacional de Agricultura Tropical |
| CIARLA | Centro de Investigaciones Agropecuarias Region Los Andes |
| CIAT | Centro Internacional de Agricultura Tropical |
| CID | Consortium for International Development |
| CIDA | Canadian International Development Agency |
| CILSS | Comite permanent interetat du lutte contre le secheresse dans le Sahel- Permanent Interstate Committee for Drought Control in the Sahel) |
| CIMMYT | Centro Internacional de Mejoramiento de Maiz y Trigo |
| CIP | Centro Internacional de la Papa |
| CIPEA | Centre international pour l'elevage en Afrique |
| CLADES | Latin American Centre for Economic and Social Documentation |
| CLSR | Crop-Livestock Systems Research |
| CLSU | Central Luzon State University |
| comp., comps. | compiler, compilers |
| CRDI | Centre de recherche pour le developpement international |
| CRIA | Central Research Institute for Agriculture (Indonesia) |
| CRIFC | Central Research Institute for Food Crops |
| CRSP | Collaborative Research Support Program |
| DAI | Development Alternatives, Inc. |
| Dept. | Department |
| DEFIL | Development Strategies for Fragile Lands |
| ed., eds. | editor, editors |
| EFSAIP | Evaluation of Farming Systems & Agricultural Implements Project (Sebele, Botswana) |
| EMBRAPA | Empressa Brasileira de Pesquina Agropecuaria |
| et al. | (used when there are more than 3 authors) |
| FAO | Food and Agriculture Organization of the United Nations |
| FAO/SID | Food and Agriculture Organization of the United Nations/Swedish International Development Agency |
| FONAIAP | F o n d o N a c i o n a l d e I n v e s t i g a c i o n e s Agropecuarias(?)/Development(?)(Project) |
| FSDP-EV | Farming Systems Development Project - Eastern Visayas (Philippines) |
| FSIP | Farming Systems Improvement Project (Rwanda) |
| FSR | farming systems research |
| FSR/E | Farming Systems Research/Extension |
| FSR/D | Farming Systems Research/Development |

| | |
|------------|---|
| FSSP | Farming Systems Support Project (University of Florida, Gainesville) |
| FSSP/GARD | Farming Systems Support Project (University of Florida, Gainesville)/Gambia Agricultural Research and Diversification (?) |
| FSSR | Farming Systems Southern Region |
| FY | fiscal year |
| GARD | Gambia Agricultural Research and Diversification (?)/Development (?) (Project) |
| GERDA | Groupement d'études et du recherches pour le developpement de l'agronomie tropical |
| GIS | geographic information systems |
| HYVs | high yielding varieties |
| IAAE | International Association of Agricultural Economists |
| IADS | International Agricultural Development Service |
| IAF | Inter-American Foundation |
| IAFP | International Agricultural and Food Program (Cook College, Rutgers University) |
| IARCs | International Agricultural Research Centers |
| IARI | International Agricultural Research Institute |
| IBPGR | International Board for Plant Genetic Resources |
| ICA | Instituto Colombiano Agropecuario |
| ICAR | Indian Council of Agricultural Research |
| ICARDA | International Center for Agricultural Research in the Dry Areas |
| ICLARM | International Centre for Living Aquatic Resources Management |
| ICMRD | International Center for Marine Resource Development |
| ICRAF | International Center for Research in Agroforestry |
| ICRISAT | International Crops Research Institute for the Semi-Arid Tropics |
| ICRW | International Center for Research on Women |
| ICTA | Instituto de Ciencia y Tecnologia Agricolas-Institute of Agricultural Science and Technology (Guatemala) |
| IDIAP | Instituto de Investigaciones Agropecuarias de Panama |
| IDRC | International Development Research Centre |
| IDS | Institute for Development Studies |
| IDS | international development strategy |
| IDWSSD | International Drinking Water Supply and Sanitation Decade |
| IE&R, IPIA | International Education and Research, International Programs in Agriculture (Purdue U.) |
| IFAD | International Fund for Agricultural Development |
| IFDC/IRA | International Fertilizer Development Center/Institute du recherche agronomique |
| IFOAM | International Federation of Organic Agricultural Movements |
| IFPP | Integrated Farming Pilot Project (Pelotshetlha) |
| IFPRI | International Food Policy Research Institute |
| IIAP | Instituto de Investigaciones Agropecuarias de Panama |

| | |
|----------------|---|
| IICA/INR | Inter-American Institute for Cooperation on Agriculture/Institute national de recherches agronomiques |
| IICA/CIDIA | Inter-American Institute for Cooperation on Agriculture - Instituto Interamericano de Ciencias Agricolas de la Organizacion de Estados Americanos/Centro Interamericano de Documentacion e Informacion Agricola |
| IITA | International Institute of Tropical Agriculture |
| ILCA | International Livestock Center for Africa |
| ILO | International Labour Organisation |
| INCAP | Instituto de Nutricion de Centroamerica y Panama |
| INIA | Instituto Nacional de Investigaciones Agrarias |
| INIAP | Instituto Nacional de Investigacion Agropecuaria |
| INRA | Institute national de la recherche agricole |
| INRAN | Institute national de recherches agronomiques des Niger |
| Inst. | Institute |
| INSTRAW | International Research and Training Institute for the Advancement of Women |
| INTERPAKS | International Program for Agricultural Knowledge Systems (U. of Illinois, Urbana-Champaign) |
| INTSORMIL/CRSP | International Sorghum/Millet/Collaborative Research Support Program |
| INTSORMIL | International Sorghum/Millet |
| IPIA | International Programs in Agriculture (Purdue University) |
| IPM | integrated pest management |
| IRAEN | International Rice Agro-Economic Network |
| IRAT | Institute des recherches agronomiques tropicales et des cultures vivrieres |
| IRCs | International Research Centers |
| IRCT/Mali | Institut de recherche du coton et des textiles exotiques (Mali) |
| IRRI | International Rice Research Institute |
| ISA | Investigacion de Sistemas Agropecuarios |
| ISAR | Institute for Agricultural Research (Rwanda) |
| ISNAR | International Service for National Agricultural Research |
| ISRA | Institut S n galais de Recherche Agricole - Senegal Agricultural Research Institute |
| ISS | Institute of Social Studies |
| IUFS&T | International Union of Food Science & Technology (Goteborg, Sweden) |
| IUNS | International Union of Nutritional Sciences (Zurich) |
| KKU | Khon Kaen University, Thailand |
| KKU/FCSP | Khon Kaen University/Ford Cropping Systems Project |
| KSU | Kansas State University (Manhattan, Kansas) |
| LASA | Lesotho Agricultural Sector Analysis Project |
| MAFC | Ministry of Agriculture, Food and Consumer Affairs (Barbados) |
| MARC | Monitoring and Assessment Research Centre |
| MARIF | Malang Research Institute for Food Crops |

| | |
|----------|--|
| MDP | Molapo Development Project (Maun) |
| MF | microfiche |
| MIAC | MidAmerica International Agricultural Consortium |
| MIDAS | Managed Inputs and Delivery of Agricultural Services |
| MP | miscellaneous papers |
| MSTT | Modular System for Technology Transference |
| MSU | Michigan State University (East Lansing, Michigan) |
| n.d. | no date of publication |
| NADP | Ngamiland and Agricultural Development Project (Gomare) |
| NARS | national agricultural research systems |
| NERAD | Northeast Rainfed Agricultural Development Project (Thailand) |
| NGA | National Grains Authority (Quezon City, Philippines) |
| NGO | non-governmental organization |
| NIEO | new international economic order |
| NOAA | National Oceanic and Atmospheric Administration |
| NRDP | National Rural Development Project (Malawi) |
| NSW/ACT | New South Wales/Australian Capital Territory |
| OAS | Organization of American States |
| OAU/STRC | Organization of African Unity/Scientific Technical Research Commission |
| OAU | Organization of African Unity |
| ODA | Overseas Development Administration |
| ODI | Overseas Development Institute |
| OECD | Organization for Economic Cooperation and Development |
| OLC | Overseas Liaison Committee (American Council on Education) |
| ORD | Organisme regional de developpement |
| ORSTOM | Office de la recherche scientifique et technique outre-mer |
| PACO | Projet Agricole du Centre-Ouest (Ivory Coast) |
| PAR | planning-centered approach to research |
| PARC | Pakistan Agricultura Research Council |
| PASITA | Program of Advanced Studies in Institution Building and Technical Assistance Methodology |
| PC | paper copy |
| PCARR | Philippine Council for Agriculture and Resources Research |
| PCARRD | Philippine Council for Agriculture and Resource Research and Development |
| PCCMCA | Programa Cooperativo Centroamericano para el Mejoramiento de Cultivos Alimenticios |
| PGRCE | Plant Genetic Resource Center for Ethiopia |
| PN | publication number |
| PR | progress report |
| PRC | People's Republic of China |
| PROTAAL | Proyecto Cooperativo de Investigacion sobre Tecnologia Agropecuaria en America Latina |

| | |
|------------|--|
| PSCPA | Proyecto de Sistemas de Cultivo para Pequeños Agricultores y del Istmo Centroamericano |
| PTPA | Proyecto de Tecnología para Pequeños Agricultores |
| RD | reporting documents |
| ROC | Republic of China |
| ROCAP | Regional Office of Central American Programs |
| RPO | ? (World Bank)/International Finance Corporation |
| RRFH | regular research field hearings |
| RTN | Research and Training Network |
| s.l. | no location of publisher/printer |
| s.n. | no name of publisher/printer |
| S&T/AGR/AP | Bureau for Science and Technology/Office of Agriculture/? |
| SACUC | Swaziland Agricultural College and University Centre |
| SADCC | Southern African Development Coordination Committee |
| SADDC | Southern African Development Coordination Committee |
| SAFGRAD | Semi-Arid Food Grains Research and Development Program |
| SAREC | Swedish Agency for Research Cooperation with Developing Countries |
| SAT | semi-arid tropics |
| SEADAG | Southeast Asian Development Advisory Group |
| SEARCA | Southeast Asian Regional Center for Graduate Study and Research in Agriculture |
| SIRDO | Integrated System for Recycling Organic Wastes |
| SOA | School On-The-Air |
| SR-CRSP | Small Ruminant-Collaborative Research Support Program (Germany) |
| SSRC/SERP | Social Science Research Centre/Socio-Economic Research Project |
| STRC/OAU | Scientific Technical Research Commission/Organization of African Unity |
| SURIF | Sukamandi Research Institute for Food Crops (Subang, West Java, Indonesia) |
| T&V | training and visit system |
| TARO | Tanzania Agricultural Research Organization |
| TES | typical (Developing Country) extension systems |
| TFNC | Tanzania Food and Nutrition Centre |
| TIF | Technological Improvement File |
| Trans. | translation |
| U. | University |
| UN | United Nations |
| UN/ESCAP | United Nations/Economic and Social Commission for Asia and the Pacific |
| UNAZA | ? (Zaire) |
| UNDP/FAO | United Nations Development Programme/Food and Agriculture Organization of the United Nations |
| UNESCO | United Nations Educational, Scientific, and Cultural Organization |
| UNU | United Nations University (Tokyo) |
| US | United States |

| | |
|-------------|--|
| USAID | United States Agency for International Development |
| USDA | United States Department of Agriculture |
| var. | various (paging) |
| VITA | Volunteers in Technical Assistance |
| VLS | village level studies |
| VLS | village level studies |
| vol., vols. | volume, volumes |
| WA | West Africa |
| WARDA | West Africa Rice Development Association |
| WHO | World Health Organization |
| WIADP | Women in Agriculture (Development Project) |
| WIDRIC | Women and International Development Research and Information Center (U. of Minnesota, Minneapolis, Minnesota) |
| Winrock | Winrock International Institute for Agricultural Development |
| WIP | Winrock International publication |
| WIRFS | Women in Rice Farming Systems |
| WP | working papers |
| WSARP | Western Sudan Agricultural Research Project |

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FARMING SYSTEMS RESEARCH BIBLIOGRAPHY: 1990 SUPPLEMENT

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- 2668 **ANNOTATED BIBLIOGRAPHY OF FARMING SYSTEMS STUDIES IN TANZANIA.** Minde, I. (1986)* s.l.: Tanzania Agricultural Research Organization (TARO). (Tanzania Farming Systems Publications No.137; Contract AFR-0156-C-00-3033-00) 52p. **KEYWORDS:** Africa, Tanzania, bibliographies ++
- 2669 **BASELINE SURVEY FOR HANANG DISTRICT, TANZANIA: A DESCRIPTION OF AGRO-ECOLOGICAL ZONES, AGRICULTURAL PRODUCTION AND THE IMPACT OF VILLAGIZATION.** Kjærby, F. (1982)* Copenhagen: Centre for Development Research. (CDR Project Papers, No.D.82.1, Jan. 1982) 47p. **KEYWORDS:** Africa, Tanzania, baseline data, surveys, agricultural production, villages, agroecosystems TZ.1
- 2670 **BENEFICIARY PROFILE OF HAUTE CHAOUIA (MOROCCO).** Morton, A. (1982) s.l.: s.n.. (Contract Number USAID/M-PSC-608-136-S-00-2006-00) 148p. **KEYWORDS:** Africa, Morocco, socioeconomic constraints, Rainfed Agriculture Project, woman's status, small farms, medium sized farms, large farms, cereals, credit, mechanization, FSR, cropping systems, social history, social organization, land accumulation, land fragmentation, animal sharing, employment MA.1
- 2671 **BURUNDI SMALL FARMING SYSTEMS RESEARCH PROJECT.** [1982?] [Washington: U.S. Agency for International Development (USAID)]. (USAID Project No.695-0106; includes USAID Inspector General Audit Report No.3-695-88-27, Sep. 23, 1988) 130p. **KEYWORDS:** Africa, Burundi, programs and projects, small farmers, institutions, appropriate technology, nutrition, food crops, evaluation BI.1
- 2672 **DIAGNOSTIC SURVEY OF MASWA AND MEATU DISTRICTS.** (Phase 1: Informal Survey) (1989)* Amsterdam: Royal Tropical Institute. (Tanzania/Netherlands Farming Systems Research Project, Lake Zone; Working Paper No.4, July 1989) 64p. **KEYWORDS:** Africa, Tanzania, surveys, problem identification, environment, soils, population, livestock, land use, livestock, crops, crop husbandry, marketing, socioeconomic conditions, zoning, cropping patterns TZ.1
- 2673 **DIAGNOSTIC SURVEY OF BUKOBA DISTRICT.** (1989)* Amsterdam: Royal Tropical Institute. (Tanzania/Netherlands Farming Systems Research Project, Lake Zone; Working Paper No.3, April 1989) 53p. **KEYWORDS:** Africa, Tanzania, surveys, soils, population, livestock, land use, crops, marketing, socioeconomic conditions, zoning, ecology, cropping patterns TZ.1

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- 2678 **FARMING SYSTEMS SURVEY OF NDIAN DIVISION, SOUTH WEST PROVINCE, REPUBLIC OF CAMEROON.** Almy, S.W. [1989]* Buea, Cameroon: S.W. Almy, Cameroon National Institute of Agricultural Research (IRA)-Ekona, National Cereals Research and Extension Programme. 50p. KEYWORDS: Africa, Cameroon, surveys, planning of research, baseline data, environment, resources, cropping systems, objectives, households, livestock, food crops, management, maize, cassava, cocoyams, taro, plantains, bananas, yams, groundnuts, melons, markets, cash crops, problem identification, income, labor, land, recommendations, farmers' attitudes CM.1

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1.A CROPPING PATTERNS

- 2691 **BARLEY, CORN, HARD WHEAT, AND SOFT WHEAT FIELD SIZES IN THE ABDA REGION.** Rafsnider, G. (1986) Lincoln, Nebr.: MidAmerica International Agricultural Consortium. (MIAC Agric. Econ. Info. Rpt. No. 3) 3p. KEYWORDS: Africa, Morocco, barley, maize, hard wheat, wheat, field sizes, enterprise budgets, data MA.1.A
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- 2693 **METHODOLOGIE DE RECHERCHE-DEVELOPPEMENT EN AGRICULTURE.** Trebuil, G. (1982) Songkla, Thailand: Universite Prince de Songkla. (Projet de recherches sur les systemes de production agricole) 19p. KEYWORDS: research methodology, development theory, foundations, research development objectives, labor, production systems, rotations, cultivation 1.A
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- 2699 **EVALUATION OF PRELIMINARY FARMING SYSTEMS TECHNOLOGIES: ZERO-TILLAGE SYSTEMS IN WEST AFRICA.** IN: Agricultural Systems Knipscheer, H.C. (1983) (Vol.11 p.95-103, 1983) 9p. KEYWORDS: Africa, West Africa, appropriate technology, technology development, evaluation, legumes, leuceana, maize, alley farming, minimum tillage systems S3/.A45

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- 2700 **SUMMER CROPS IN SYRIA.** IN: Studies of Farming Systems in Syria, 1977-79 Harvey, J. (1980) Norwich, England: ICARDA Farming Systems Research Programme, Overseas Development Group, Univ. of East Anglia. (Complementary to Vol.2, Farming Systems in Six Aleppo and Two Hama Villages) 36p. KEYWORDS: Asia, Middle East, Syria, farming systems research, FSR, crop production, watermelon, sesame, musk melon, agricultural zones, soil types SY.1.A.4

1.A.5 SHIFTING CULTIVATION

- 2701 **CROPPING SYSTEMS AND ROTATIONS DEVELOPMENT FOR IMPROVING SHIFTING CULTIVATION AND RELATED INTERMITTENT PRODUCTION SYSTEMS IN TROPICAL AFRICA.** IN: FAO Soils Bulletin Okigbo, B.N. (1984) (Vol.53 p.121-40, 1984) 20p. KEYWORDS: Africa, tropics, shifting cultivation, cropping systems, rotations, traditional farming, alley farming AFRICA.1.A.5

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- 2704 **PROMOTING THE "FERTILIZER BUSH" AMONG NIGERIAN FARMERS.** IN: VITA News Cashman, K. (1988) (p.7-10, July/Oct. 1988; to locate at KSU see Johnson, "Skits, Extension Agents...") 4p. KEYWORDS: Africa, Nigeria, alley farming, participation, agroforestry, fertilization, soil fertility, cropping systems CF.3.E.1.B.AA

- 2705 **PROMOTION OF TREE PLANTING ON SMALL FARMS IN THE AREA OF ACOSTA-PURISCAL, COSTA RICA.** (Prepared for the planning workshop "Planting Trees With Small Farmers," organized by the Pan American Development Foundation (PADF), Port-au-Prince, Haiti, Aug. 1985) Beer, J. (1985)* Turrialba, Costa Rica: J. Beer, Centro Agronómico Tropical de Investigación y Enseñanza (CATIE). 9p. **KEYWORDS:** Latin America, Central America, Costa Rica, agroforestry, fruit trees, tree cropping, constraints, timber production, afforestation, demonstrations, objectives CR.1.A.6
- 2706 **ROLE OF FORESTRY IN DRY AFRICA.** IN: Journal of Forestry Harou, P.A. (1985) (p.142-47, Mar. 1985) 6p. **KEYWORDS:** Africa, Sahel, Sudan, arid regions, forestry, deforestation AFRICA.1.A.6
- 2707 **USE OF ETHNOECOLOGY IN AGROFORESTRY SYSTEMS RESEARCH: AN EXAMPLE OF AF TECHNOLOGY AND PEST MANAGEMENT RESEARCH IN KENYA.** (Paper presented at the Farming Systems Research and Extension Symposium, University of Arkansas, Fayetteville, Arkansas, Oct. 18-21, 1987 Rocheleau, D. (1987)* [Nairobi: D. Rocheleau, International Center for Research in Agroforestry (ICRAF)]. 50p. **KEYWORDS:** Africa, East Africa, Kenya, agroforestry, case studies, appropriate technology, pest management, indigenous knowledge systems, ethnic groups, land use, traditional farming, ecology, cultural ecology, anthropology KE.1.A.6

1.B ANIMAL SYSTEMS

- 2708 **ADAPTATIONS OF FARMING SYSTEMS RESEARCH TO THE STUDY OF PASTORAL PRODUCTION SYSTEMS: THE NIGER RANGE AND LIVESTOCK PROJECT.** IN: Social Sciences and Farming Systems Research: Methodological Perspectives on Agricultural Development. J.R. Jones and B.S. Wallace, eds. Curry, J.J., Jr. (1986) Boulder, Colo.: Westview Press. (Westview Special Studies in Agriculture Science and Policy; p.195-220) 26p. **KEYWORDS:** Africa, West Africa, Niger, livestock production, animal husbandry, pastoralism S494.5/.S95/S6/1986
- 2709 **CHARACTERISATION OF KENANA CATTLE AT UM BANEIN, SUDAN.** Saeed, A.M. (1987) Addis Ababa, Ethiopia: International Livestock Centre for Africa (ILCA). (ILCA Research Report No. 16, May 1987) 46p. **KEYWORDS:** Africa, Sudan, ILCA, livestock, cattle, Kenana cattle, reproduction, growth, lactation, milk, mortality, cattle management ++

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- 2711 **GETTING MARKETING INTO FARMING SYSTEMS RESEARCH: A CASE STUDY FROM WESTERN SUDAN.** IN: Social Sciences and Farming Systems Research: Methodological Perspectives on Agricultural Development. J.R. Jones and B.S. Wallace, eds. Reeves, E.B. (1986) Boulder, Colo.: Westview Press. (Westview Special Studies in Agriculture Science and Policy; p.99-121) 23p. **KEYWORDS:** Africa, Sudan, methodology, agricultural economics, marketing, technology analysis, target selection, economic analysis, recommendation domains, market prices, surveys, prices, evaluation, anthropology S494.5/.S95/S6/1986
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- 2714 **MARGINAL AND STEPPE LIVESTOCK FARMING SYSTEMS IN ALEPPO PROVINCE.** IN: Studies of Farming Systems in Syria, 1977-79. Martin, A. (1980) Norwich, England: ICARDA Farming Systems Research Programme, Overseas Development Group, Univ. of East Anglia: (Vol.3; originally produced as an ICARDA Internal Document: Research Report No. 2, Section 6). 66p. **KEYWORDS:** Asia, Middle East, Syria, farming systems research, FSR, livestock, sheep, crop production, cropping patterns, agricultural productivity, livestock feeding, metabolizable energy, feeding habits ++

- 2715 **PRODUCTION RATIONALES: THE COMMERCIALIZATION OF SUBSISTENCE PASTORALISM.** Behnke, R.H. [1983?]* s.l.: s.n.. 33p. KEYWORDS: Africa, East Africa, Libya, Somalia, Botswana, Finland, pastoralism, commercial farming, subsistence farming, livestock, history, labor, ranching, changes, land tenure, animal husbandry, demography, reindeer, sheep, goats, camels, cattle, productivity, economic analysis, range management, domestication, herd size, programs and projects 1.B
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- 2718 **ANIMAL TRACTION IN SUB-SAHARAN AFRICA.** IN: ILCA Bulletin (1981) (No.14 p.2-17, Dec. 1981) 16p. KEYWORDS: Africa, animal traction, draught animals, environmental factors, constraints, feed requirements, socioeconomic constraints, productivity SF15/.A25/I11
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- 2727 **LIVESTOCK PRODUCTION IN CENTRAL MALI: THE 'MOUTON DE CASE' SYSTEM OF SMALLHOLDER SHEEP FATTENING.** IN: Agricultural Systems Kolff, H.E. (1985) (Vol.16 p.217-230, 1985; USAID Doc. No. PN-AAT-644) 14p. **KEYWORDS:** Africa, West Africa, Mali, semiarid zones, livestock, sheep, animal husbandry, feeding, diet, animal protein, value systems, rice, millets, mixed farming, socioeconomic status, constraints S3/.A45
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1.D AQUACULTURE AND AGRICULTURE

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- 2749 **SAHELIAN/SUDANIAN ZONES OF AFRICA: PROFILE OF A FRAGILE ENVIRONMENT.** Thomas, G.W. (1981) Las Cruces, N.M.: New Mexico State Univ., Center for International Programs. (New Mexico State Univ. International Publications Series Technical Information Publication 0001-81; Report to the Rockefeller Foundation) 139p. KEYWORDS: Africa, Sahel, Sudanian zone, environment, natural resources, demography, food production, infrastructure, development organizations, desertification, land use, education, training, technology transfers ++

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- 2759 **WHY THE POOR SUFFER MOST: DROUGHT AND THE SAHEL.** Twose, N. (1984) Oxford: Oxfam Publications Dept., 274 Banbury Rd., Oxford OX2 7DZ. (Behind the Weather Series) 20p. KEYWORDS: Africa, West Africa, Sahel, drought, famine, weather, climate, food production AFRICA.2.A.2

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- 2760 **EVALUATION INTERIME DE DEUX PROJETS DE LA PRODUCTION AGRICOLE AU SENEGAL: L'ANALYSE ECONOMIQUE DE CULTURE IRRIGUEE ET SUR TERRAIN SEC.** Franzel, S. 1979 East Lansing, Mich.: Michigan State University, Department of Agricultural Economics. (African Rural Employment/Economy Working Paper No. 28) 66p. KEYWORDS: Africa, Senegal, arid regions, evaluation, agricultural production, economic analysis, irrigation, rain-fed farming, dry farming HD2144.5/.F72/1979

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- 2763 **GLIRICIDIA SEPIUM (JACQ.) STEUD: A SELECTED BIBLIOGRAPHY.** Sumberg, J.E. (1986) Addis Ababa, Ethiopia: International Livestock Centre for Africa. 12p. **KEYWORDS:** bibliographies, leguminosae, gliricidia sepium, agroforestry, green manure, fuelwood, fodder crops, alley farming 2.B
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- 2766 **AMARANTH: WILD GREENS AND ANCIENT GRAIN.** IN: New Mexico Magazine Seidel, M. (1983) (p.65-6, Dec. 1983; to locate at KSU see Masson, "Old-Time Honest...") 2p. **KEYWORDS:** cereals, food crops, amaranth, amaranthus hypochondriacus, amaranthus retroflexus, feral varieties, varieties 2.B.1
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- 2768 **ANCIENT, NUTRITIOUS GRAIN REDISCOVERED BY SCIENTISTS.** IN: The New Mexican Brody, J.E. (1984) (p.C-8, Oct. 24, 1984; to locate at KSU see Masson, "Old-Time Honest...") 1p. **KEYWORDS:** amaranth, cereals, nutrition, varieties, heat resistance, vegetables 2.B.1

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- 2773 **FARMER MANAGEMENT OF VARIETAL BEAN MIXTURES IN CENTRAL AFRICA: IMPLICATIONS FOR A TECHNOLOGY DEVELOPMENT STRATEGY.** Voss, J. [1988?]* Cali, Colombia: J. Voss, Centro Internacional de Agricultura Tropical (CIAT). 26p. KEYWORDS: Africa, Central Africa, beans, seed mixtures, yields, food supply, farmers' attitudes, experiment stations, plant diseases, varieties, seed selection, women in agriculture, marketing, disease resistance, consumer preferences, phaseolus vulgaris, prices, genetic variation AFRICA.2.B.1
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- 2777 **NEW DIMENSIONS FOR FABA BEAN RESEARCH AND PRODUCTION IN EGYPT AND SUDAN.** (A Profile of the ICARDA/IFAD Nile Valley Project) (1982) Aleppo, Syria: International Center for Agricultural Research in the Dry Areas (ICARDA). 20p. KEYWORDS: Africa, Egypt, Sudan, ICARDA, IFAD, dry farming, faba beans, constraints, on-farm trials, yields, nutrition, hybrids, water management, disease resistance, surveys, programs and projects, extension, experiment stations, seed production, objectives SD.2.B.1
- 2778 **NEW LOOK AT THE IMPORTANCE OF CULTIVARS IN COWPEA RESEARCH: EVIDENCE FROM NORTHERN CAMEROON.** IN: Research Highlights: Michigan State University Bean/Cowpea CRSP Ta'Ama, M.E. (1985) (Vol.2 no.5 p.1-4, 1985) 4p. KEYWORDS: Africa, Cameroon, semiarid zones, cowpeas, cultivars, SAFGRAD, on-farm testing, yields, disease resistance, drought resistance, variety trials, surveys CM.2.B.1
- 2779 **OLD-TIME HONEST AMARANTH IS A GOOD CROP FOR SUMMER.** IN: The New York Times Masson, W. (1984) (p.H-29, May 27, 1984) 1p. KEYWORDS: amaranth, amaranthus tricolor, heat resistance, vegetables 2.B.1
- 2780 **POTATOES IN CENTRAL AFRICA: A SURVEY OF BURUNDI, RWANDA AND ZAIRE.** Scott, G.J. (1988) Lima: International Potato Center (CIP). 159p. KEYWORDS: Africa, Central Africa, Burundi, Rwanda, Zaire, potatoes, crop production, food distribution and marketing ++
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- 2787 **USE OF LABLAB BEAN (DOLICHOS LABLAB) BY TRADITIONAL FARMERS IN HONDURAS.** Flores, M. (1989)* Tegucigalpa, Honduras: International Cover Crop Clearinghouse; Apdo. 278-C; Tel.32-6474. 8p. **KEYWORDS:** Central America, Honduras, traditional farming, beans, lablab beans, dolichos lablab, intercropping, maize, fodder crops, food crops, feed crops, legumes HN.2.B.1
- 2788 **VARIETAL TRAITS LIMITING THE GRAIN YIELD OF TROPICAL MAIZE I, II, III, IV.** IN: Soil Science and Plant Nutrition Yamaguchi, J. (1974) (Vol. 20 nos.1-3 p.69-78 (I), p.145-54 (II), p.155-61 (III), p.287-304 (IV), 1974) 38p. **KEYWORDS:** Latin America, Mexico, tropics, cereals, maize, yields, growth yield relationship, growth analysis, growth factors, growth inhibitors, growth promoters, growth period, altitude, varieties, tillage MX.2.B.1

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- 2789 **INTEGRATED PEST MANAGEMENT: RICE CROP PROTECTION IN THE PHILIPPINES WITHOUT HAZARDS FOR THE ENVIRONMENT.** IN: AT Source Reus, J. (1990) (Vol.17 no.2 p.4-11, 1990) 8p. **KEYWORDS:** Asia, Pacific, Philippines, integrated pest management, pest control, environment, rice, diseases, pest resistance PH.2.B.2

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- 2790 **ADAPTION OF THE POTATO TO THE LOWLAND TROPICS.** International Potato Center. (1975) Lima: International Potato Center (CIP). (Report of the International Potato Center Planning Conference held in association with the Sixth Triennial Conference of the European Association for Potato Research, Wageningen, Netherlands, Sep., 1975) 25p. **KEYWORDS:** potatoes, tropics, diseases, varieties 2.B.2.C

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- 2791 **PERFORMANCE OF EXOTIC DAIRY CATTLE UNDER DIFFICULT ENVIRONMENTS.** IN: Asian Livestock Khan, U.N. (1990) (Vol.15 no.2 p.17-23, Feb. 1990) 7p. **KEYWORDS:** tropics, subtropics, dairy cattle, cattle breeds, diseases 2.B.3
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2.B.3.A ANIMAL PARASITES

- 2793 **EFFECT OF PPR CONTROL AND DIPPING ON VILLAGE GOAT POPULATIONS IN SOUTHWEST NIGERIA.** IN: ILCA Bulletin Reynolds, L. (1988) (no.32 p.22-27, Nov. 1988) 6p. **KEYWORDS:** Africa, West Africa, Nigeria, goats, ruminants, diseases, livestock, animal health SF15/.A25/I11

3 HUMAN ELEMENT: EXOGENOUS FACTORS

- 2794 **ANIMATION RURALE AND RURAL DEVELOPMENT: THE EXPERIENCE OF SENEGAL.** Gellar, S. (1980) Ithaca, N.Y.: Cornell University, Center for International Studies, Rural Development Committee. (Special Series on Animation RURALE: No.2) 211p. KEYWORDS: Africa, Senegal, rural development, USAID, Animation RURALE, development theory, extension, development projects, development policy, analysis, case studies, social policy, history HN829.Z9C63
- 2795 **APPLIED AGRONOMIC RESEARCH PROGRAM FOR DRYLAND FARMING IN 200-400 MM RAINFALL ZONE OF MOROCCO.** (1977) [Lincoln, Neb.?: MidAmerica International Agricultural Consortium]. (Contract No. AID/NE-C-1284, Univ. of Nebraska) 187p. KEYWORDS: Africa, North Africa, Morocco, arid regions, agronomy, dry farming, training, participation, evaluation, USAID, agrarian reform, institutionalization, precipitation, soil moisture, cropping patterns, soil types, extension, fertilizers, soil fertility, productivity, tillage, soil testing, forage, livestock systems, range management, forage seed production, livestock nutrition, machinery, equipment, socioeconomic conditions, rural households, land use, cereals, draught animals, animal power, tractors, marketing, price policy, credit, cooperatives, land tenure, labor supply, women, land tenancy, technology transfers ++
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- 3.E EXTERNAL INSTITUTIONS**
- 2819 **MAINTIEN D'UNE PROMESSE: LE DEVELOPPEMENT AGRICOLE AU SAHEL.** (1987) Washington, D.C.: U.S. Congress, Office of Technology Assessment. (Rapport Special De L'OTA) 36p. KEYWORDS: West Africa, Sahel, background, development programs, poverty, technology, politics, USAID, development aid, Peace Corps Africa.3.E
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- 2821 **CO-OPERATIVE VEGETABLE GROWING AND MARKETING IN THE GAMBIA.** IN: Agricultural Administration Sargent, M. (1986) (Vol. 21, p. 67-79, 1986) 13p. KEYWORDS: Africa, Gambia, vegetables, onions, cooperative farming, cooperatives, marketing HD1401/.A36
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- 2845 **MANAGERIAL CONSTRAINTS TO RURAL DEVELOPMENT IN AFRICA: LESSONS FROM THE GAMBIA AND ELSEWHERE.** IN: Agricultural Administration Reilly, W. (1987) (Vol.26, p.137-149, 1987) 13p. **KEYWORDS:** Africa, Sahel, Gambia, programs and projects, management, management training, problem identification, constraints, rural development, decision making, cultural environment, organizational structures, organization, finance, development aid, development administration HD1401/.A36
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- 2847 **REPRESENTATIVE FARM MODELING FOR EVALUATION OF NEW TECHNOLOGIES AND ANALYSIS OF AGRICULTURAL POLICIES IN MOROCCO.** Roth, M. [1988]* Madison, Wisc.: M. Roth, Land Tenure Center, Univ. of Wisconsin. 6p. **KEYWORDS:** Africa, North Africa, Morocco, innovations, technology development, farm models, evaluation, agricultural policy, appropriate technology, technology analysis, pest control, price support, price policy, subsidies MA.3.E.2
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- 2889 **ENTERPRISE BUDGETS FOR CEREALS PRODUCED BY FARMERS WHO OWNED TRACTORS AND OPERATED BETWEEN 10 AND 250 HECTARES IN THE ABDA REGION OF SAFI PROVINCE, MOROCCO DURING THE 1985-86 CROPPING YEAR.** Rafsnider, G. (1987) Lincoln, Neb.: University of Nebraska. (Morocco Dryland Agriculture Applied Research Program under USAID Project No. 608-0136, Agricultural Economics Bulletin Number 1) 21p. KEYWORDS: Africa, Morocco, enterprise budgets, cereals, tractors, barley, maize, hard wheat, wheat, technical production, farmer surveys, operating costs, revenues, capital, tillage, fertilization, planting, crop husbandry, harvesting, storage MA.4.B

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- 2898 **LESOTHO FARMING SYSTEMS: A CLOSER LOOK AT WOMEN FARM MANAGERS AND THE PROBLEMS OF SUBSISTENCE PRODUCTION.** (Paper presented at the Eleventh International Congress of Anthropological and Ethnological Sciences, Vancouver, British Columbia, Aug. 21, 1983) Butler, L.M. (1983)* Puyallup, Wash.: L.M. Butler, Dept. of Rural Sociology and Extension Anthropology, Washington State Univ.. 21p. KEYWORDS: Africa, Southern Africa, Lesotho, women in agriculture, management, subsistence farming, socioeconomic status, land, labor, animal traction, migration, baseline data LS.4.B

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4.C ECONOMIC OUTPUT

- 2907 **SOCIO-ECONOMIC DETERMINANTS OF FOOD CONSUMPTION AND PRODUCTION IN RURAL SIERRA LEONE: APPLICATION OF AN AGRICULTURAL HOUSEHOLD MODEL WITH SEVERAL COMMODITIES.** Strauss, J (1983) East Lansing, Mich.: Michigan State University, Department of Agricultural Economics. (MSU International Development Paper No. 5, 1983) 91p. KEYWORDS: Africa, Sierra Leone, food consumption, households, nutrition, sociology, demand, production, household consumption, models, income, commodities SL.4.C

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5 FARMING SYSTEMS RESEARCH METHODOLOGY

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