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HOUSEHOLD FOOD SECURITY

ANNOTATED BIBLIOGRAPHY

by

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INTRODUCTION

This is an annotated bibliography dealing with recent literature relevant to household food security issues. It was prepared under the auspices of a Cooperative Agreement between the University of Arizona and the Office of Nutrition, Bureau for Science and Technology, U.S. Agency for International Development.

For the purposes of this bibliography, we are using a definition of food security that was presented in a policy paper issued by World Bank in 1986 entitled Poverty and Hunger. Food security is defined as "access by all people at all times to enough food for an active and healthy life." Food security includes the availability of food "and the ability to acquire it."

Much of the literature on food security is based on research conducted in Africa. While the bulk of the references in this bibliography reflect this interest, we have also included literature on food security research conducted in Asia and Latin America.

The major focus of this bibliography is on household food security. For this reason, a number of the works dealing with national food security were omitted. The materials in this volume that deal with food security policy were selected because they linked policy issues to household security.

In addition to articles and books, this volume also includes annotations summarizing dissertations, reports, and unpublished papers. This literature was obtained through library searches, computer-generated data searches, and through a compilation of literature obtained through the Nutrition in Agriculture Network. An attempt was made to restrict the coverage to those English works written or published since 1984.

To facilitate access to and utilization of the annotations in this volume, each selection has been classified according to one of five categories. These include: Food Security Policy, Household Food Security and Coping Strategies, Women and Food Security, Regional Food Security, and General. These categories are not mutually exclusive. For example works focusing on women and food security are a subset of works dealing with household food security.

The first category, Food Security Policy, encompasses works that address how different national-level policies affect household food security. Topics include the household impact of structural adjustment, market liberalization, pricing and food rationing, government relief programs, free market strategies, livestock exports, and internal trade.

The second section focuses on Household Food Security and Coping Strategies. Household coping strategies are the activities households pursue to deal with seasonal food shortages and famine. A broad range of works is presented summarizing research findings from Africa, Asia, and Latin America.

The third category deals with Women and Food Security. This section includes literature emphasizing the important role that women and children play in ensuring household food security. Many of these works point out the unique problems women face in agricultural and pastoral societies that must be taken into account in food security interventions.

The fourth section of this bibliography deals with Regional Food Security. The literature included under this category addresses household food security issues that are generalized for a particular region. Works dealing with regional issues from Africa and the Middle East are presented.

The fifth and final section, General, includes literature that addresses household food security issues in general. Issues raised in these works include farmers' practices, population pressure, the instability of the environment, and the international marketplace. Edited volumes summarized in this section also address regional and household food security and policy issues.

This volume is a working document to be used by researchers concerned with the topic of household food security. It is hoped that it will provide a basis upon which to enhance our understanding of this topic and its relationship to agricultural development. We encourage the reader to bring to our attention additional documents that might have been inadvertently omitted.

FOOD SECURITY POLICY

- Alderman, Harold, M. Ghaffar Chaudhry and Marito Garcia
1988 Household Food Security in Pakistan: The Ration Shop System.
Working Papers on Food Subsidies Number 4. Pakistan Institute
of Development Economics, Islamabad, Pakistan and International
Food Policy Research Institute, Washington, D.C.

During times of high food prices or shortages, many countries have instituted food subsidy schemes, policies which these same governments find difficult to end in spite of rising fiscal costs. Pakistan has subsidized part of the wheat flour consumed by households through a ration system. In a policy change in the mid 1980s, wheat flour was derationalized, being replaced by a price subsidy for wheat. This study examines how this policy change has affected the urban poor and the entire grain market system. The authors evaluate the relevance of the ration shop system to the issues of the alleviation of poverty and malnutrition. In the final section they present the basic conclusions of the study and make recommendations based on these conclusions.

- Amani, H.K.R., S.M. Kapunda, N.H.I. Lipumba and B.J.Ndulu
1987 Impact of Market Liberalisation on Household Food Security in Tanzania. In Household and National Food Security in Southern Africa. Godfrey D. Mudimu and Richard H. Bernstein, eds. Proceedings of the Fourth Annual Conference on Food Security Research in Southern Africa, October 31-November 3, 1988, pp. 29-43. UZ/MSU Food Security Research in Southern Africa Project. Harare, Zimbabwe.

This paper analyzes the impact of policy measures, including adjustment and stabilization policies in general, and market liberalization in particular, on food security in Tanzania since July 1984. A summary of a 1987 paper is included which presents background and discussions on the impact of adjustments before 1984. Section two uses micro-level data to analyze the impact of food market liberalization on consumption growth primarily through income and price changes. Market liberalization leading to income increases for the rural population and improvements in food market performance, improves rather than worsens rural food security. Liberalization which improves the functioning of markets improves urban food security, particularly if low food prices were not in effect previously. In the third section, the authors examine some possible policy interventions for reducing food security for those most at risk, particularly as they relate to meeting nutritional needs. While market liberalization since 1984 has increased the food supply and increased efficiency of markets, the incidence of protein-energy malnutrition, particularly for children under five years, is

still high. Food security can be improved by raising household income and developing more efficient markets, reserving costly feeding programs for the population which suffers severe malnutrition.

Carney, Judith Ann

1986 The Social History of Gambian Rice Production: An Analysis of Food Security Strategies. Dissertation. Geography. University of California, Berkeley.

Rice has become the primary cereal staple in The Gambia although the country is not, and has not been for some time, self-sufficient. Food security policies in The Gambia have long focused on rice, most recently through import-substitution projects. Domestic cereal demand continues to grow, however, and rice imports currently account for more than half The Gambia's annual needs. This dissertation presents an historical case study of local rice production to examine the genesis and character of the Gambian food crisis.

In this work, constraints on food production are treated historically and theoretically. First, changes in the domestic organization of labor and shifting relations of resource access are charted over the period from the early nineteenth century to the present. Second, these transformations are viewed theoretically as the outcome of local adjustments to specific forms of commoditization and state agricultural policies. In The Gambia, agricultural development did not bring about the complete dissolution of non-capitalist food production systems. Instead rice, traditionally cultivated by women, emerged as the primary food staple, which led to a marked sexual division of labor and specialized ecosystem use.

The historical legacy is examined in relation to the contemporary failure of irrigated rice projects to achieve domestic food security. In the first phase of irrigation, from 1966 to 1980, the projects were oriented solely to men. While this ruptured the prevailing gender basis of rice cultivation, male control led to an under-utilization of the perimeters. A recently-implemented irrigation project aims to overcome productivity constraints by demanding double-cropping as a condition for participation.

By utilizing insights from recent advances in household research, an empirical study of the Jahaly Pacharr project illuminates the manner in which men and women are responding to rapid commercialization of rice. Multiple struggles both between and within households are developing over access to irrigated land and family labor. The study argues that the ability of the irrigation sector to achieve national food security and local economic improvement rests on (1) the

resolution of these conflicts and (ii) the use of the investible surpluses generated by participants in the projects. (Author's abstract from UMI Dissertation Abstracts).

Chambers, Robert and Melissa Leach
1989 Trees as savings and security for the rural poor. World Development 17(3):329-342.

Professionals have rarely seen trees as savings banks for poor people. But while trees and their products have become more valuable and easier to market, many poor people have become more vulnerable as contingencies cost more and traditional supports weaken. Consequently, trees have increasing importance and potential as savings and security for the poor, and for use to meet contingencies.

For savings and security, trees compare quite well with jewelry, large stock, small stock, land, and bank deposits. Disadvantages of trees can include insecure or unclear rights, restrictions on cutting and selling when needed, and problems with marketing; but common advantages include cheap and easy establishment, rapid appreciation in value, divisibility to meet needs closely, and regeneration after cutting. More empirical studies are needed on the use and potential of trees as poor people's savings banks. The policy implications of present evidence and analysis include tree reform, improved marketing and prices, and above all investing poor people with secure and full ownership of trees, with rights to harvest, cut and sell similar to the withdrawal rights of depositors in savings banks. (Author's abstract)

Chambers, Robert and Richard Longhurst
1986 Trees, seasons and the poor. IDS Bulletin 17(3):44-50.

Trees have been overlooked as a means of livelihood for poor people. Where the use of trees has been recognized, it is usually seen as a problem of encroachment of forests or of environmental degradation. The authors claim that the range of use of trees is too vast to be sketched in an article, but some of the contributions they make to understanding the livelihoods of the poor can be presented under four heads: micro-climate effects; slack and lean season food and fodder; livelihood activities (smoothing peaks and filling slacks); and meeting seasonal contingencies. The article examines these four categories and concludes with some important policy implications and possible interventions for counterseasonal benefits for the poor.

Chateaneuf, R.

1987 Role of Roots, Tubers and Plantains in Food Security in Latin America and the Caribbean. Rome, Food and Agriculture Commodities and Trade Division, FAO Committee on Food Security Session 12.

Roots, tubers, and plantains are important staples in the rural areas of Latin America and the Caribbean. Rapid urbanization and resultant changing dietary patterns in the city as well as a number of other constraints have resulted in decreased production of roots and tubers, with the exception of potatoes. The decreased importance placed on roots and tubers to a great extent has been caused by policy attention which has bypassed the small farmer, the main producer of roots and tubers, and has extended price support to cereal production. For these reasons, the prices received by farmers for root crops have been inadequate to encourage the introduction of productivity increasing measures. Roots and tubers play an important role in maintaining food security and should receive the same policy attention as cereals. To expand their role in food security in Latin America and the Caribbean, constraints to production need to be removed to increase yields and create jobs for the small rural farmers and countries need to contain the rising volume of cereal imports.

Cogill, Bruce

1987 The Effects on Income, Health, and Nutritional Status of Increasing Agricultural Commercialization in South-West Kenya. Dissertation. Cornell University.

The impact of the shift from maize production to contract sugarcane farming by smallholders in Kenya is controversial. Studies of agricultural commercialization have indicated positive, negative, or neutral income, health, and nutritional effects.

This semi-longitudinal study was undertaken during 1984 and 1985 over two maize-growing seasons to examine the effects of a sugar factory and smallholder contract sugarcane scheme in impoverished South Nyanza District. Households were randomly selected and included 181 participants in the contract scheme, 232 farming households not growing sugarcane, and 91 non-farming households including landless and merchant households. Four rounds of detailed demographic, income, and production, and consumption data were collected at the household level. Individual data on health and nutritional status were collected on 793 mothers and their 1,397 pre-schoolers.

Regressions results show that in the short-term and after controlling household wealth, size, education, and seasonal effects, sugarcane farmers have 37 percent higher incomes than non-sugarcane farmers. This difference can be attributed to

cash cropping. Furthermore, fluctuations in income of sugarcane farmers have likely been reduced due to integrated sugarcane markets and guaranteed producer prices, as well as sales of other crops. The increase in income is associated with small, though significant, improvements in household welfare, including reductions in child and maternal morbidity and short- and long-term malnutrition. Pre-school children of sugar farmers showed greater gains in length than the other groups.

Greater income from sugarcane production has not been at the cost of women's control of income or household food security, as reflected by food stocks, food production, and consumption from home production. Greater control of income by women in the form of small food crop sales, wages, and home consumption was associated with increased household food intake, reduced child morbidity and improved child growth. Although no association was observed between greater sugarcane income and increased household level energy intake, increases in total income was associated with increases in energy intake.

Policy recommendations are discussed to enhance positive and reduce negative effects of commercialization. (Author's abstract from UMI Dissertation Abstracts).

Collier, Paul
1988 Oil Shocks and Food Security in Nigeria. International Labor Review 127(6):761-782.

The oil boom of 1973-81 in Nigeria generated complex changes in the structure of employment, production, and prices. Combined with weak data, these complex events lead to partial and incomplete analyses of the basic functioning of the country. This article begins by reviewing what is known about changes in food production, then goes on to attempt to set food security in the context of these macro-economic developments. The author examines his finding that relative food prices rose during the oil boom while food production declined in the context of the rising government expenditures which diverted labor out of agriculture. The next section studies the associated implications for food consumption and nutrition, and the final section surveys the data for the period 1983-85 to assess agriculture's capacity to accommodate rapid changes in labor supply. A prognosis is offered of food security in the intensifying oil slump. The author concludes that although Nigeria seems to offer a perfect example of the "Dutch disease" economic theory, it fails to explain many aspects of the food sector. The "Nigerian disease" is used to explain how the government used the oil revenue for import-substituting industries and construction which diverted the labor from food production. As labor moves back into agriculture, food production should rise, and hence lower prices. But devaluation will divert resources from food crops into tradable crops,

lowering food production and raising prices. The final conclusion is that lack of data leaves many aspects of food security in Nigeria in the realm of conjecture.

Davies, Susanna

1987 Plantations and the Rural Economy: Poverty, Employment and Food Security in Kenya. IDS Bulletin 18(2):15-20.

The first part of this article deals with indirect links between people in plantations and the rural economy in Kenya. Data from plantations on basic needs provisions are then compared with data from the areas from which the plantation workers originate. The next section explores arguments for and against employment of the rural landless in plantations, and the final section discusses food security among plantation workers and the rural poorest. The author admits that the case of Kenyan tea plantations is not typical, but it raises relevant questions such as the effect of a local indigenous labor force as opposed to non-indigenous migrant labor on people's access to basic needs. She concludes by raising a major policy issue that needs to be addressed; whether the development of basic needs provisions on plantations can be sustained under conditions of surplus labor availability, when there is no need to "attract" labor.

DeWalt, Kathleen M. and Billie R.

1989 Nutrition and Agricultural Change in Honduras. Food and Nutrition Bulletin 9(3):36-45.

This paper discusses the findings of a farming systems research project conducted in Southern Honduras between 1981 and 1984 that led to research on relationship between farming systems and nutrition systems (the nutrition-systems approach). The nutrition-systems approach has become important since the recognition that technological modernization and economic growth have not improved the nutritional status of marginal rural populations. This approach requires that four areas be addressed in agricultural research programmes: 1) targeting those at greatest nutritional risk; 2) understanding the role of particular crops in the overall diet, and predicting new technology's impact on food consumption; 3) recommending how programmes can be used to improve nutritional status of those at risk; and 4) monitoring and evaluating based on programme impact on food consumption and nutritional impact. The article describes how agricultural research by INTSORMIL in Southern Honduras was impacted by this approach. The discovery that most sorghum was purchased rather than domestically produced led to policy recommendations, and information on acceptability and use clarified the need to understand indigenous methods of preparation. Also, an understanding of diets is necessary in establishing breeding priorities, such as the value of improving protein content or quality. In Southern Honduras, calories are

more limiting than protein.

Dione, J. and J. Staats

1988 Market Liberalization and Food Security in Mali. In Southern Africa: Food Security Policy Options, Mandivamba Rukuni and Richard H. Bernstein, eds. Proceedings of the Third Annual Conference on Food Security Research in Southern Africa. 1-5 November, 1987, pp. 143-170. University of Zimbabwe/Michigan State University Food Security Research Project, Department of Agricultural Economics and Extension, Harare, Zimbabwe.

Since 1981 Mali has been fundamentally restructuring its economy, aimed at placing greater reliance on the market as a coordinating mechanism, redefining the state's role in the economy, and stabilising macroeconomic variables such as the balance of payments, the government budget, the rate of inflation, and the growth of national income. This structural adjustment process has involved a broad range of activities, including rewriting of the commercial and fiscal codes. The centerpiece of the reforms has been the liberalization of the cereal markets, under the multi-donor financed Cereal Market Restructuring Project, known by its French acronym, PRMC.

This paper describes the background and goals of the PRMC, evaluates its performance during its first six years, discusses the role of food security research in informing the reform process, and draws implications from the Malian experience for the design of market liberalization and related policy research elsewhere in Africa. (Authors' introduction)

Dione, Josue

1989 Food Security Policy Reform in Mali and the Sahel. International Economic Association, IXth World Congress, Athens, Greece, 28 August - 1 September, 1989

Poor pricing and marketing policies have been perceived as two major causes of food insecurity in the Sahelian region of West Africa. To address these problems, cereal market reforms were initiated in the Sahel in the 1980s. This paper analyzes market liberalization in Mali, a landlocked Sahelian country with per capita GNP of U.S. \$210, where donors pledged a multiyear food-aid program in exchange for market reforms. Most consumers and private traders have benefited from the liberalization. But improving foodgrain marketing is addressing only one of the five main causes of food insecurity in Mali. Complementary reforms must be undertaken.

Hay, Roger W.

1988 Famine Incomes and Employment: Has Botswana Anything to Teach Africa? World Development 16(9):1113-1125.

This paper analyzes the objectives, structure, and success of

the Botswana Drought Relief Program between 1982 and 1985 interims of its impact on lost income and employment. The design of Botswana's famine containment strategy was directed towards the replacement of lost income and the preservation of productive assets. It was successful in reaching all of its stated objectives. However, the paper argues that underlying rural unemployment both precipitated the crisis and was aggravated by it. The paper therefore proposes that famine management should be based on an "employment," as well as an "incomes," theory of famine. This is the main lesson Botswana's experience has to offer. (Author's abstract)

Holm, John D. and Richard G. Morgan
1985 Coping with Drought in Botswana: an African Success. Journal of Modern African Studies 23:463-482.

A certain degree of inequality is accepted by the Botswana government as necessary for "capital mobilisation." However, during the most recent drought, the political elite have mitigated inegalitarian effects of drought in a relief program and have provided food and other aid to the needy "as a matter of right and not as a consequence of political supplication". This article examines the drought relief program in Botswana and how the country has been successful in countering the normal tendency of drought to intensify political inequalities in Africa. The author concludes, however, for the Botswana government to deal with drought in the long run, productive wealth, primarily cattle, needs to be reallocated on a more equitable basis, a strategy which the government has been reluctant to consider. Botswana's ability to provide relief aid has been dependent on diamond-led economic development and foreign assistance, either of which could be undermined in the future. Consequently, a restructuring of the rural economy needs to be undertaken to provide the ability to withstand drought.

Jamal, Vali
1988 Coping under Crisis in Uganda. International Labour Review 127(6):679-701.

The Ugandan economy has undergone massive structural shifts since General Idi Amin Dada brought about the collapse of the modern Asian sector. Economic mismanagement followed by civil war resulted in the destruction of infrastructure and the country's export productive activities. Real incomes fell everywhere, but in the countryside subsistence production cushioned the fall. This paper outlines how food security did not suffer as much as the economic collapse data would indicate. In the towns, despite the massive fall in wages and disruption of supplies, the food situation remained healthy, as former Asian trading fell into the hands of the Africans, and urban families resorted to subsistence farming on their own garden

plots. Food consumption changed from meat and milk to mostly root crops, but basic food requirements were met for the majority of the population. Non-food consumption did fall drastically, however, and the revival of the economy as a whole depends on an increase in export crop production. The government policy of massive devaluation brought necessary price increases. But even though food security has never really been threatened, the economy as a whole cannot be revitalized without investment into infrastructure that would encourage farmers to once again produce export crops.

Jamal, Vali

1988 **Somalia: Survival in a "Doomed" Economy.** International Labour Review 127:783-812.

The article focuses on food production and consumption in the special circumstances of the Somali economy. It is shown that Somali nomads and farmers have enjoyed a much higher level of real welfare than hitherto assumed, while in the urban areas poverty has been averted despite falling wages because of remittances sent home from Somali workers abroad. Since most transactions, including remittances, livestock exports and internal trade, take place at essentially free market rates, the standard structural adjustment remedies applied in Somalia are peripheral to the real problems of adjustment. By creating the illusion that they provide the answer to all of the country's problems they may even be harming its economy. (Author's abstract).

Kaluwa, Ben M. and Benson F. Kandoole

1987 **The Impact of Market Reforms on Household Food Security in Rural Malawi.** In Household and National Food Security in Southern Africa. Proceedings of the Fourth Annual Conference on Food Security Research in Southern Africa, October 31-November 3, 1988. Godfrey D. Mudimu and Richard H. Bernstein, eds. pp 45-61. UZ/MSU Food Security Research in Southern Africa Project. Harare, Zimbabwe.

A number of factors which led to a poor economic environment in Malawi by the early 1980s had serious effects on both the macroeconomy and the poor. A program for dealing with the structural problems was undertaken by World Bank and IMF. This article 1) describes the agricultural sector, 2) describes the characteristics of the vulnerable groups, and 3) analyzes the effects of the market reforms on the smallholder. In the final section, the authors present policy implications drawn on their analyses. The study revealed that land constraints are the basis of much of the deprivation of the smallholder farmers, but this problem is compounded by price liberalization and market reform. Reforms need to give serious consideration to resettlement, support for private traders in rural areas, and rural extension into nontraditional areas such as livestock

development, business/craft development, and crop diversification.

Longhurst, Richard

1987 Rural Productivity, Malnutrition and Structural Adjustment. in Poverty, Development and Food: Essays in honour of H. W. Singer on his 75th birthday., pp. 112-122. Macmillan Press.

The major reason for declining per capita food production in most African countries has been a neglect of small farmers. Strategies to increase their productivity would reduce food imports and increase food exports as well as increase equity. Section I of the paper illustrates the linkages between small farmer productivity, household food security and balance of payments and suggests that national adjustment policy should concentrate on areas where national interests and those of the vulnerable groups overlap. Longhurst examines three areas on which restructuring of agricultural policy needs to focus; export crops, seasonality of the food supply, and food aid. The paper suggests that there need not be conflicts between household food security and export crop production if a reorientation of policy addresses the role and technical competence of women as producers, reduces the incidence of severe fluctuations in food supply, and uses food aid as a complementary resource.

Makombe, G., R. H. Bernstein and David D. Rohrbach

1987 The Economics of Groundnut Production by Communal Farmers in Zimbabwe in Food Security for Southern Africa, Mandivamba Rukuni and Carl K. Eicher, eds., pp. 185-215. UZ/MSU Food Security Project, Department of Agricultural Economics and Extension, University of Zimbabwe, Harare, Zimbabwe.

A consequence of Zimbabwe government policy which has emphasized communal crop production of maize has been the decline in land devoted to groundnuts. Groundnuts are an important source of concentrated energy and protein in the communal areas and important to food security. "The purpose of this chapter is to analyze recent trends in the area planted, yields and sales of groundnuts in communal areas; assess the impact of price policy on the decline in groundnut area; analyze farm level constraints on the expansion of groundnut production in two communal areas; evaluate the technical potential and economic viability of the existing groundnut package; and draw conclusions for designing policy interventions to reverse the downward spiral in groundnut production." The chapter ends with a summary and implications for further research. Chief among the important range of issues for further investigation is the need to better define the relationship between production strategies for food and cash crops.

Martin, Frederic Pierre

1988

Food Security and Comparative Advantage in Senegal: A Micro-Macro Approach. Dissertation. Agricultural Economics. Michigan State University.

This research analyzes food security and comparative advantage in Senegal, from both a micro and macro perspective. The subject was chosen because of the continuing debate about whether poor countries with important food deficits such as Senegal should follow comparative advantage and import food financed by export earnings, or instead support local food production to increase self-sufficiency.

The research objectives were (1) to develop a conceptual framework for analyzing food security and comparative advantage at the farm and national levels; (2) to conduct an empirical analysis of: (a) Senegal's current and projected comparative advantage; (b) the costs associated with higher levels of cereals self-sufficiency; and (c) the key variables which stimulate or constrain cereals production. The research methodology recognized the need for consistency between the farmers' strategies and government's food strategy. First, the national food supply/demand situation was analyzed. Then Farm-level costs and returns were analyzed by preparing 181 crop budgets, used as the basis for 13 typical farm models. These LP models represented major production regions and incorporated micro food security constraints.

Regional cereals supply curves were estimated assuming 20%-100% increases in financial cereals producer prices. These supply curves were incorporated into an agricultural sector model, which used separable programming techniques to identify the combination of local production and trade which minimized the cost of achieving given levels of cereals self-sufficiency.

The results showed limited cereals supply response to price increases. Land for rice production is limited, and millet/sorghum remains less profitable than peanuts. Maize output increases substantially, which might create a surplus given the small demand for that cereal. Output increases more significantly when expansion of irrigated area is assumed, but irrigation development and higher producer prices are costly to government and consumers.

Raising the rice price alone (e.g., by establishing a protected regional market) has negligible effects on production, but would impose substantial costs on consumers. Aligning producer prices with economic prices would produce benefits from Senegal's current comparative advantage in peanut production, but may not be a viable long-run strategy. (Author's abstract from UMI Dissertation Abstracts)

Pinstrup-Andersen, Per

1988 **Food Security and Structural Adjustment.** Paper prepared for the eighth agricultural sector symposium, World Bank, Washington, D.C., January 6-8, 1988. Cornell Nutritional Surveillance Program Division of Nutritional Sciences, Cornell University, Ithaca, New York.

Stabilization and adjustment programs seem to have caused further deterioration of the food security of much of the poor populations of the world, resulting in increased malnutrition, reduced labor productivity, higher morbidity, low birth weight and death of the most vulnerable members of a family. The purpose of this paper is to contribute to recent attempts to address this problem and to propose how structural adjustment can improve rather than worsen food security for the poor. Structural adjustment programs should be tailored to the particular country, time period and economic problem. The author first discusses links between food security and structural adjustment, followed with a summary of evidence of the impact of past stabilization and food security. In the next section options for simultaneously pursuing structural adjustment and food security are presented. The author concludes with a number of key findings and issues emerging from the paper.

Rohrbach, David Deems

1988 **The Growth of Smallholder Maize Production in Zimbabwe: Causes and Implications for Food Security.** Dissertation. Agricultural Economics. Michigan State University.

This thesis identifies the factors explaining the tripling of smallholder maize production in Zimbabwe between 1979 and 1985. The analysis explores the effect of post-independence policy, institutional and technological interventions on smallholder production and market decision making through a combined analysis of aggregate small farm sector data and farm level survey data. The results of the analysis are used to evaluate the implications of the production growth for Zimbabwe's food security.

The growth of smallholder maize production can be attributed to five major factors. The ending of the independence war in late 1979 reestablished rural stability and fostered a major expansion in cultivated area. Yield growth was made possible by the availability of an improved set of production technologies arising from decades of investment in agricultural research. The adoption of technologies, and more importantly, higher rates of application were fostered by the establishment of a smallholder credit program. Input and product market infrastructure rapidly expanded through a complementary set of

public and private sector investments. Finally, smallholders faced a remunerative set of guaranteed prices which stood at particularly high levels immediately following the war.

The analysis compares the impact of these policy, institutional and technological changes in two high and low rainfall regions of the country. It finds the largest gains in smallholder maize production and sales were concentrated among farmers receiving greater rain and those owning greater production resources. While all smallholders benefited from the resultant aggregate increase in maize production and sales, further improvements in the food security of low resource farmers will require additional targeting of assistance to this constituency. The objectives of aggregate, national food security and household food security must be recognized as both complementary and distinct.

The smallholder maize production and market gains achieved over the 1979 to 1985 period provide strong evidence of the responsiveness of small farmers to shifting production and market incentives. This analysis of smallholder decision making underlying these gains provides information useful for the development of strategies necessary to extend and broaden future growth in the small farm economy. (Author's abstract from UMI Dissertation Abstracts)

Sipula, Kapola F., John T. Milimo, C. Mwila and David K. Mendamenda
1987 Agricultural Policy and Its Impact on Food Security: the Zambian Case. In Household and National Food Security in Southern Africa. Proceedings of the Fourth Annual Conference on Food Security Research in Southern Africa, October 31-November 3, 1988. Godfrey D. Mudimu and Richard H. Bernstein, eds., pp. 63-75. UZ/MSU Food Security Research in Southern Africa Project. Harare, Zimbabwe.

Since independence in 1964, the Zambian government has used a number of instruments to achieve government policy objectives of achieving a satisfactory level of food self-sufficiency, increase export crop production and promote economic development in rural areas. This paper analyzes the form of these policy objectives, namely price controls, crop marketing policies and practices, consumer and producer subsidies and foreign exchange controls. In the face of declines in the mining industry, government policy has been directed at the agriculture sector, particularly maize production and marketing, which is seen as almost synonymous with food security. While in good years, when rainfall is sufficient, Zambia is capable of producing sufficient maize, large and small scale irrigation systems need to be expanded to supplement rainfed agriculture in bad years. Like the rest of the economy, the government needs to diversify

agriculture, a policy which in recent years the government, through incentives, has employed in the commercial sector to encouraged farmers to grow crops other than maize.

Szal, Richard

1988 Is There an Agrarian Crisis in Madagascar? International Labour Review 127:735-760.

The economic situation of Madagascar has frequently been depicted as critical both externally and internally. Heavy investment in the industrial and economic sectors in the 1970s led to a rapid exhaustion of foreign exchange reserves. In the 1980s the country had one of the highest external debts in Africa. Reduced imports of industrial and consumer goods coupled with apparent food shortages have put pressure on the local economy. In trying to determine just how severe these problems have been, the article focuses especially on the agricultural sector. The production and marketing of rice, the principal food for most households, as well as public policy in this field, are analysed in detail. Finally, an attempt is made to ascertain the effects of changes in the relative price of food on poverty and the distribution of income. (Author's abstract)

Tabatabai, Hamid

1988 Agricultural Decline and Access to Food in Ghana. International Labour Review 127:703-734.

This article analyzes the reasons for the recent decline in agriculture in Ghana, in evidence by the early 1980s. In a macroeconomic overview the author reviews the internal contradictions in Ghanaian development strategies which led to the decline, and follows this discussion with an analysis of the nature of that decline. Subsequent sections examine the role of prices, migration, and changes in incomes resultant from the decline. Access to food and the various survival strategies utilized by the population are the topics of the next section. In the final section, the author reviews the reasons for agricultural weakness and concludes that the roots of the economic crisis in Ghana can be traced to weaknesses in development strategies which were adopted shortly following independence. The strategy was unsustainable because of "dual constraints of inadequate domestic food production and shortage of foreign exchange". Although access to food diminished among some groups of the population as reflected in real income, it is difficult to assess the extent because survival strategies employed mitigated declines in standards of living.

Weber, Michael T., John M. Staatz, John S. Holtzman, Eric W. Crawford, and Richard H. Bernstein

1988 Informing Food Security Decisions in Africa: Empirical Analysis and Policy Dialogue. American Journal of Agricultural Economics 70:1044-1052.

Discussions of economic and agricultural development in Africa have focused heavily in recent years on structural adjustment, i.e., basic policy changes aimed at allowing international and domestic markets to play a greater role in coordinating national economic activities. Often these structural adjustments and accompanying policies aimed at improving economic performance have been based on several implicit assumptions about how African food systems operate. Yet, for many countries little empirical information has been available to test these assumptions. Hence, designing policies too often becomes an exercise in planning without facts.

This paper argues that not only is there a need to base food security and structural adjustment policies more firmly on empirical information, but that the process by which the information is obtained is as important as the information itself. Agricultural economists and other social scientists can, and increasingly should, design policy research in Africa in ways that simultaneously increase effective demand for empirical information as an input into the ongoing policy process and augment African capacity continually to inform policy deliberations. We illustrate the payoffs to such an approach by drawing on selected experience in several African countries. (Weber's abstract)

HOUSEHOLD FOOD SECURITY AND COPING STRATEGIES

Abdoellah, Oekan Soekotjo

1987 Comparative 'Adaptive Strategies' of Transmigrants in Indonesia: A Case Study in Barambai, South Kalimantan. In Human Ecology of Health and Survival in Asia and the South Pacific, pp. 73-91. University of Tokyo Press, Tokyo.

Transmigration as a government program in Indonesia began in the early part of the century, and was designed to solve population pressures in Java, foster economic development in the outer islands, disperse populations for defense and security purposes, and to promote cultural assimilation, political integration, and economic consolidation. Transmigrants who have moved from population centers onto reclaimed swamp land in Barambai, in South Kalimantan have resorted to a number of adaptive strategies to compensate for low soil fertility and low productivity of rice fields. The author describes four general kinds of adaptive strategies; agricultural, off-farm, food, and

resource allocation. The strategies adopted by Balanese, Javanese, and Sudanese transmigrants are influenced by environmental and economic constraints as well as social-cultural background of the transmigrants. Balanese adaptive strategies which include a mixed diet, conservative resource allocation, selling rice when prices are highest, and purchasing of pigs or rice fields has given them a favored economic position over Sudanese and Javanese transmigrants. Sudanese and Javanese transmigrants, while utilizing some of these strategies, often use the sale of rice to pay off debts and gain social prestige through selamatan ceremonies. After repaying debts, Sudanese and Javanese often do not have rice left over and are in a less favored economic position.

Aujla, Paramjit Kaur, S. S. Miglani and A. J. Singh

1984 Effect of Income on Food Consumption Behavior in Rural Households. Journal of Research, Punjabi Agricultural University 21(4):607-616.

The effect of income on food consumption behavior was studied in rural households. As the economic condition improved, a lesser proportion of income was spent on cereals and more on milk and milk products. In all economic categories cereals, jaggery (gur) and sugar, milk and milk products, and vegetables were consumed above the recommended amount, whereas the pulses, meat, fish and eggs, roots and tubers, fruits and leafy vegetables were consumed much below the recommended amounts. The quantity of protein consumed increased with increase in income. The intake of riboflavin was below the recommended level for low and middle income groups and just adequate for high income groups. The niacin and vitamin C were consumed below recommended amount by all the groups. (Author's abstract)

Bangladesh Rural Advancement Committee

1986 Household Strategies in Bonkura Village. In Community Management: Asian Experience and Perspectives, pp. 62-76. USA Kumarian Press, West Hartford, Conn.

This article examines village-level resource allocation process in Bonkura Village in Bangladesh. After a brief description of the population, the authors describe land use decisions, which are important elements of the household strategy for maintaining economic and political positions in the village. They next discuss the selection of crops and technology and indicate that basic food security was the primary concern of farmers in their selection of cropping patterns. Farmers were primarily growing rice to meet subsistence requirements even though on the basis of net economic returns it would have been advantageous to plant jute. Selling in local markets and other subsidiary agricultural production as well as regional wage labor were all additional economic options available to villagers. The authors identify ten household strategies which were used to enhance

social, political, and economic positions in the community and examine these strategies in terms of starting point, intermediate goal, means, and idiom of behavior. This article highlights the complexity of household strategies in one village in Bangladesh where resources primarily flow through kinship channels. While external incomes have become significant, the internal distribution of these resources has remained traditional.

Bratton, Michael

1987 Drought, Food and the Social Organization of Small Farmers in Zimbabwe. In Drought and Hunger in Africa: Denying Famine a Future. Michael H. Glantz, ed., pp. 213-244. Cambridge University Press, Cambridge.

Zimbabwe has achieved self-sufficiency in most foodstuffs and in favorable times has been an exporter of maize. The country is also a net exporter of beef. The capacity to produce food is not equal among all households, but those farmers who work in groups, two-thirds of whom are women, consistently outproduce farmers who work alone. The chapter is divided into four sections which focus on the impact of farmer organization on food production and consumption. The first section considers how farmer organizations fit into the main forms of social organization. Section two gives climatic, agricultural, and peasant farming systems background information on Zimbabwe. The third section shows how farmer organizations have helped the small farmers by increasing production levels through pooling labor or providing draft power and by increasing the level of exchange through bulk buying and selling. Section four looks at the effects of the drought in the early 1980s on collective action and sources of household food supply. Farmer organizations in Zimbabwe have ameliorated the disruptive effects of drought and appear to buffer farmers from food deficits for one season longer than individual farmers. Group farmers are better able to guarantee a grain supply for home storage or to purchase grain from the market because they produce, retain, and sell more maize. The author makes several suggestions for making certain that farmer organizations are to succeed. He sees a need to give special attention to the very poorest of households, those frequently headed by women and which are not currently involved in collective organizations.

Campbell, David J.

1984 Response to Drought Among Farmers and Herders in Southern Kajiado District, Kenya. Human Ecology 12:35-64.

From 1972 to 1976 rainfall in Kajiado District of Kenya was below normal. The capacity of the farming and herding systems to cope with the consequent reduction in production is discussed within a context of changing land-use patterns and altered resource availability. It is concluded that land-use planning

to allocate the available land and water resources and to promote off-farm employment is required to reduce the vulnerability of the population to future drought conditions. (Author's abstract)

Campbell, David J. and David D. Trechter
1982 Strategies for coping with food consumption shortage in the Mandara Mountains region of North Cameroon. Social Science and Medicine 16:2117-2127.

Two major approaches to the question of food shortages in Africa have emerged. One discusses the food deficits of different communities and the other has focused on the provision of food relief from external sources. The success of those concerned with external relief has been constrained by the relative insensitivity of their warning systems to local food supply conditions. This paper draws on research in the Mandara Mountains region of Cameroon to argue that the monitoring of community-level responses to food shortage can provide an early warning of impending severe food deficits which may enable more rapid provision of external assistance. (Author's abstract)

The results of this survey show that men and women respond somewhat differently to food shortage. Women appear to be responsible for the seasonal shortages, while both men and women are active in overcoming the more severe problems. Seasonal shortage is managed mainly by selling/slaughtering livestock, borrowing food or money, and family assistance. But coping during unusually severe food deficit years is through strategies which include family assistance, wild foods, food purchases, migration selling stock, special plantings, and selling food. More women report planting special foods, while migration is more common among men. The timing of migration is an important indicator of impending food shortages, as is reduction in food consumption by missing meals or not eating for an entire day.

Cashdan, Elizabeth A.
1985 Coping with Risk: Reciprocity among the Basarwa of Northern Botswana. Man. New Series 20:454-474.

In this article I discuss the role of reciprocity in buffering fluctuations in resources, and consider why, and under what circumstances, people use one means of risk reduction rather than another. Drawing on the theory of risk and insurance, I suggest some factors that will affect this choice. The issue is then addressed more specifically through an analysis of reciprocity on the Nata River. Storage and reciprocity are the two primary methods used for buffering variation in food supply in this area, and the article documents and seeks to explain why the Basarwa (Bushmen) depend more on reciprocity, and less on storage, than do their Tswana and Kalanga neighbours. (Author's abstract)

Chaiken, Miriam S.

1988 Household Resource Allocation and Food Security in Western Kenya. Paper presented at the annual meetings of the American Anthropological Association, November 16-20, Phoenix, Arizona.

This paper focuses on the relationship between subsistence and cash crop production, the gender of farm managers, and allocation patterns of household resources. It is based on research in two communities in Kenya which have been the subject of inter-disciplinary farming systems research since 1981. The communities differ in economic orientation, environment, population density and ethnic composition and consequently participate in the cash economy in varying degrees. Research falsified the hypotheses that (1) men control a greater proportion of the total household income than women, (2) women's income would be in small amounts received intermittently throughout the year, while men would tend to receive larger lump sums, and (3) women's income would be used for daily household maintenance and food expenditures, while men's income would be invested in major items, such as livestock, school fees or house improvements. In these two communities, data suggests that both men and women play important roles in production for the market economy and exercise control over income received in the sale of export and subsistence crops. The author challenges conventional assumptions about the gender based dichotomy in household economic systems and the passivity of women in East African cash crop economies. Even though women have access to resources, this does not mean that their families will be better fed. Sufficient food consumption levels will be reached only when overall income and production levels are adequate.

Conelly, W. Thomas and Miriam S. Chaiken

1987 Land, Labor, and Livestock: The Impact of Intense Population Pressure on Food Security in Western Kenya. Paper presented at the 1987 Meeting of the American Anthropological Association, November 18-22, Chicago.

The results of a study of food consumption patterns in two areas of Western Kenya is the focus of this paper. While cash cropping and off-farm labor are determining factors in obtaining an adequate diet, population pressure is an important third variable in analyzing food security. Even in farming systems which exhibit a good balance of cash and food crop production, very high population densities will result in a decline in adequacy of diet and a decrease in food security. This data from Kenya showed that in the community of Masumbi, which experienced less reliable rainfall and lower participation in the cash economy, consumption levels of both starch and protein foods was greater than in Hamisi, a village which has more favorable environmental conditions and a balanced economy. Intense population pressure in Hamisi has (1) limited the availability of land for food crop production, (2) pressured

farmers to seek off-farm employment and re-allocate labor to cash crops, and (3) placed restrictions on the ability of farmers to maintain livestock. All of these factors have led to observed lower level of food consumption in the community. With rapid population growth in Kenya, attention needs to be paid to the relationship between population density and food security.

Corbett, Jane

1988 Famine and Household Coping Strategies. World Development 16:1099-1112.

Households faced with risks to their entitlement to food will plan strategically to minimize their impact. The task of doing this will be particularly demanding during famines. This paper reviews the evidence on household strategies for coping with famine in Africa and identifies some distinctive patterns in these strategies which can be used to examine household objectives at times of crisis, the management of resources to meet these objectives and limits to the effectiveness of coping strategies. In particular it examines the role of asset management and trade-offs between maintaining current food consumption levels and protecting the future income generating capacity of the household. (Author's abstract)

D'Agostino, Victoire Cristina

1988 Coarse Grain Production and Transactions in Mali: Farm Household Strategies and Government Policy. MS Thesis. Agricultural Economics. Michigan State University.

The purpose of this study was to analyze farm-level coarse grain (millet, sorghum, and maize) production and market and non-market transactions in the Operation Haute Vallee and Campagne Malienne de Developpement des Textiles regions of southern Mali.

The analytical measures include descriptive statistics, multiple regression, and inferential statistical test. Primary data were collected in a series of region-wide farm surveys of 189 farmers from September 1985 to October 1986. Baseline data, as well as data on village characteristics, household cereals production and stocks, monthly coarse grain transactions, and taxation were used in the analysis.

The results primarily point to not only the importance of domestic grain production in assuring household level food security, but also the role of the institutional environment, on-farm and off-farm diversification, the timing of cash obligations, and market proximity in determining grain transaction behavior. (UMI dissertation abstracts)

Downing, Thomas Edward

1988

Climatic Variability, Food Security and Smallholder Agriculturalists in Six Districts of Central and Eastern Kenya.
Dissertation. Clark University.

The effect of climatic variability on household food security in six districts of Central and Eastern Kenya is assessed.

During severe drought there is little households are able to do to meet their food requirements from on-farm production. However, in moderate drought, average and good years there is remarkable potential for agricultural improvements, constrained by availability of labor and credit, and competition with off-farm investment of labor and capital.

Household participation in the monetary economy has reduced vulnerability to drought in the short term. The corollary of the apparent lessening of vulnerability is a shift of primary responsibility for coping with drought from the individual household toward the national government and international food markets, through food markets and provision of famine relief.

Vulnerability to hunger among smallholder agriculturalists in Central and Eastern Kenya is characterized by four dimensions: temporal persistence (climatic variability), resource endowment (agroecological potential and land use), resource entitlement (through agricultural production and off-farm employment), and special nutritional needs (children under 5, pregnant and lactating women). The groups most vulnerable to hunger during severe drought are over 40 percent of the population, three times larger than those vulnerable to chronic hunger. Since the 1970s, the range of practicable drought coping strategies appears to have narrowed, and shifted from agricultural strategies to increased involvement in the monetary economy.

The logic of household production and reproduction in rural areas has changed with increasing participation in the market economy. Households are no longer peasant risk minimizers. Neither are they climatic opportunists, i.e., attempting to make the best possible use of the good years. A pattern emerges of climatic satisficing, accepting agricultural production without additional investment in either poor or good years, and risk spreading through the diversification of sources of income, most notably in off-farm employment. (Author's abstract from UMI Dissertation Abstracts)

FAO

1989

Household Food Security and Forestry: an Analysis of Socio-economic Issues. Food and Agriculture Organization of the United Nations. Rome.

This report was prepared as part of a study by the Oxford

Forestry Institute and is a compilation of information presented at a meeting on the socio-economic aspects of the role of forestry in food production and food security. It draws on studies of different population groups to show how the use of trees and forest products are changing, focusing on the impacts on the poor and women. The report also addresses the consequences of decreasing forestry resources and how these can be impacted through forestry policy and management. Chapter 2, *Forestry and Diets*, shows the contributions of forest and farm tree foods to the household diet and illustrates linkage between forestry and human nutrition. Chapter 3, looks at the role forests play in generating income and how this is related to household food security. In the last chapter the authors explore the role of managed trees in farming systems.

FAO

1989

Forestry and Food Security. FAO Forestry Paper 90. Food and Agriculture Organization of the United Nations. Rome.

This report is a summary of the current knowledge of the links between forestry and food security. It is based on a series of investigations which began in 1985 as a result of widely felt concerns that excessive deforestation is destroying the soil and water base necessary for agricultural production, as well as reducing the availability of forest plants and animals which are food supplies for humans. This well illustrated document is a synthesis and summary of a FAO consultation in Banlore, India, on forest related activities which have links to food production and food security at the local level. The report is divided into five chapters. Chapter I provides an overview of the problem and establishes the links between forestry and food security. In Chapter 2, environmental links between forestry and food security are discussed. Chapter 3, *Forestry and Food Production*, illustrates how forests provide both direct contributions of food as well as indirect contributions to food production. Chapter 4 focuses on the socio-economic aspects of forestry's contribution to household food security by examining how households use forest and farm tree resources. The final chapter calls for more flexible policy frameworks to provide the necessary support for specific programs and initiatives.

Gupta, Monica Das

1987

Informal Security Mechanisms and Population Retention in India. Economic Development and Cultural Change 36:101-120.

The author questions the argument of development economists who have tried to explain migration behavior in terms of differences in expected income in urban areas and levels of living in the home village left. With data from Indian, Gupta challenges the implicit assumption of this model that rural households hold enough production assets to meet most subsistence needs of family members. Data from two Indian villages, one prosperous

and one poor are used to illustrate the operation of informal security measures in the rural areas and their relative absence in urban areas. In the first portion of the paper operational indirect sources of livelihood (concessions) which continue to contribute to rural household income are reviewed. Security options open to the rural poor include free collection, income earning opportunities, and help from kin and wealthier households in the community. Migrants to urban areas, on the other hand, have access to few sources of financial support, and consequently are more likely to become destitute. The paper shows the role of certain traditional community support mechanisms in raising the opportunity costs of migration to rural areas. Erosion in access to these resources is occurring and this may result in accelerated flow of the rural poor into urban slums. This movement may be slowed by rural development Projects.

Josserand, Henri P.

1984 Farmers' Consumption of an Imported Cereal and the Cash/Foodcrop Decision. Food Policy 9(1):27-34.

The effects of key agricultural policies on Senegalese farmers are analysed through a survey combining farming systems research methods, family budgets, dietary and anthropometric studies for the same rural households. Policies impact their food consumption through farm and non-farm incomes, prices of inputs, extension and research, and the prices of basic foods. Food consumption is closely related to family success in mixed cropping, but millet remains the basic rural food. Although rice has deeply penetrated rural markets, a maintenance of export earnings will require simultaneous gains in yields for both cash and traditional food crops. (Author's abstract)

Kumar, Shubb K.

1988 Effect of Seasonal Food Shortage on Agricultural Production in Zambia. World Development 16(9):1051-1063

This paper examines the role of household food stocks in influencing patterns of seasonal labor demand by small farmers in Chipata District of Zambia, and in shaping their production profile more generally. The seasonal pattern of stock drawdown is linked with those for food consumption, nutrition, and labor input in this unimodal agricultural cycle. It is found that low levels of food stocks in the post-harvest period and their availability during the heavy work period in the rainy season can reduce the area planted as well as the use of non-agricultural labor by households. The significance of food as a wage good, possibly as a result of public policies that have reduced the growth of rural food markets, is also a factor in this process. It is argued that small farmers with low food stocks may be unable to adopt labor-intensive agricultural

technologies unless they can increase their effective demand for labor, possibly through dry season food-for-work programs or consumption credit schemes. (Author's abstract)

Leonard, William R. and Brooke Thomas
1989 Biosocial Responses to Seasonal Food Stress in Highland Peru. Human Biology 61(1):65-85.

This paper examines patterns of seasonal variation in food consumption and responses to food stress in the highland community of Nunoa, Peru. Dietary and anthropometric data collected from January through August of 1985 on a sample of 26 households (127 individuals) are analysed. This study finds sharp seasonal differences in energy intake (pre-harvest = 1150 calories/day; post-harvest = 1519/day; $p < 0.01$) associated with variation in the availability of locally-produced products (e.g., tubers and cereals). Seasonal energy reduction, however, does not uniformly affect all sectors of this population. Children experience little change in energy intake and have a more adequate pre-harvest diet and better nutritional status than adults. The responses used to "protect" children from energy stress and minimize the overall impact of seasonal food scarcity in this community include: 1) reduction of pre-harvest household caloric needs through emigration of adolescent and adult males, 2) preferential allocation of food to children during pre-harvest period, 3) seasonal reduction of activity levels and the year-round use of children for many productive activities, and 4) seasonal changes in meal patterns that minimize post-prandial energy loss during periods of stress.

Evaluation of similar data from other anthropological populations underscores the diversity of responses to seasonal change in food availability. Moreover, these data indicate that the protection of children from seasonal energy stress is more common than previously thought. Variation in adaptive responses to food stress appears to be dependent on 1) the nature of the subsistence economy, 2) the relative contributions of children and adults to household production, and 3) the demographic structure of the population. (Author's abstract)

Longhurst, Richard
1986 Household Food Strategies in Response to Seasonality and Famine. IDS Bulletin 17:27-35.

The article reviews some literature on the ways families, primarily in Northern Nigeria, ensure their household food security during both seasonal food shortages as well as unexpected non-seasonal events. Agricultural seasonal coping strategies utilized by farmers include giving first priority to food crops, use of water logged flooded areas, use of secondary crops, both gathered and grown, and adaptive flexibility in

cropping patterns depending on how rains progress. Other strategies include drawing on stores and assets, redistributive mechanisms and diversifying off-farm income sources. Famine coping strategies discussed were gathering of foods, intensified migration of whole families, and the sale of farmland assets. The author looks at several famine coping strategies described in the literature including gathering of foods, migration, and sale of farmland and assets. Rural families can extend normal seasonal mechanisms to meet a drought famine, but the poorest families must begin early to dispose of assets and resources. Longhurst makes suggestions for ways to improve rural welfare and insuring food security which do not undermine the coping mechanisms which are in place.

Malambo, Lovejoy M.

1988 Rural Food Security in Zambia. Studies relating to Integrated Rural Development, No. 29. Justus-Liebig-Giessen University, Hamburg, H. -U. Thimm.

The purpose of this study was to provide a better understanding of food security problems in Zambia from a rural household perspective. The study specifically addresses itself to how households meet target consumption levels on a yearly basis in the face of fluctuating production, prices and household incomes. The dissertation includes a descriptive analysis of the food grain production and distribution system in Zambia, followed by an investigation of rural households' food production and disposal behavior, including the utilization of on-farm storage facilities.

The data used in the analysis were collected by the author from both primary and secondary sources. Primary data were collected from a sample of 132 rural households in Mumbwa District, between July and November 1985. Secondary data were collected from published and unpublished reports from a number of government departments, parastatal organizations and international agencies.

Maize is the major food grain produced in Zambia and is also the main staple food commodity. Besides being the most important food item among the rural households, it is also the main source of income. Over 60 percent of the maize produced is used for home consumption, the rest is sold to the monopsonistic grain marketing board or cooperative unions that operate in each Zambian province. The government policy of pan-territorial and pan-seasonal pricing has made it unprofitable to store food crops on farms and has encouraged farmers to sell the grain following the harvest. This has made rural food deficit households more vulnerable to food insecurity.

The public sector grain marketing system operates to move grain from rural areas to urban centers but has largely neglected the

back-flow of grain. Grain deficit households in rural areas mainly depend on other rural households for supplemental food supplies.

The investigations also revealed that households undertake various actions to guard against poor food harvests. These include storing more grain than what is required in a single season, undertaking other agricultural activities that can raise income, such as growing vegetables and other cash crops, practicing mixed cropping or selling animals, beer and fish. Beer selling was particularly common among the low income households. (Author's abstract)

McCann, James.

1987 The Social Impact of Drought in Ethiopia. In Drought and Hunger in Africa: Denying Famine a Future. Michael H. Glantz, ed., pp. 245-267. Cambridge University Press, Cambridge.

Contrasting the lowlands of Ankober, where agriculture is relatively recent, to the highlands region of Tegulet, where agriculture has been practiced since at least the 13th century, the author provides data on micro-level socio-economic institutions and early responses to drought at the household level. His basic premise is that "response to drought and subsequent famine is not chaotic, but is a process determined by pre-existing social and economic institutions and that the most important of these practices involve borrowing and exchange of oxen. Further, the effects of drought are distributed unevenly, in that they include a process of relative enrichment for some households just as they represent tragedy for others. In fact, the key institutions affecting household access to resources and overall economic viability are those directly involving the exchange of oxen and their labor" and these are extensions of interaction which takes place under non-drought conditions." Lack of access to resources within households, primarily oxen, have made women particularly vulnerable to drought. Reconstruction efforts in Northern Ethiopia should link short-term relief with long-term goals of rebuilding household productive capacity.

Mead, Donald C.

1988 Nonfarm Income and Food Security: Lessons from Rwanda. In Household and National Food Security in Southern Africa, Godfrey D. Mudimu and Richard H. Bernstein, eds., pp. 331-338. Proceedings of the Fourth Annual Conference on Food Security Research in Southern Africa, October 31-November 3, 1988. University of Zimbabwe/Michigan State University Food Security Research Project, Department of Agricultural Economics and Extension, Harare, Zimbabwe.

For many households on small farms, it is impossible to gain sufficient income levels depending on agricultural production

alone. This paper examines evidence from Rwanda to explore the question of whether nonfarm activities can relieve pressures in densely populated countries. The paper begins with a brief overview of the nature of nonagricultural employment, and follows this with a discussion of some characteristics of the employment. Further, the author examines the policy environment in these endeavors to determine which ones hinder development and are in need of change. The final section of the article provides a discussion of needed modifications in research design which would make research more responsive to the needs of analysts in the area of food security. Food security research which places the farm household as its unit of analysis and focuses on agricultural activities, has dealt with off-farm employment and nonfarm income sources, but has not explored the prospects for expansion of these income sources. Small enterprise research, on the other hand, centers on rural nonfarm enterprises, but it has not focused on the ability of nonfarm enterprises to provide income and employment to groups of people who are unable to ensure acceptable levels of food security through farm production nor has it explored the nature of rural labor markets. These are areas which need to be addressed.

Merryman, Nancy Hawk

1984

Economy and Ecological Stress: Household Strategies of Transitional Somali Pastoralists in Northern Kenya.
Dissertation. Northwestern University.

The secessionist conflict and the Sahelian drought have shown the vulnerability of pastoral nomads to social and ecological crises. This study examines labor utilization, control of resources, risk-reduction strategies, and response to economic incentives among three population segments: pastoral nomads, destitute former nomads settled in town, and town women entrepreneurs in the miraa trade. The research was conducted among the Somali of northeastern Kenya for four years in four periods from 1972 to 1983.

The study challenges the concept of household as an adequate unit of analysis for understanding production strategies. The rational peasant approach is extended in splintering the household to examine competing or complementary economic interests of each member. The study suggests that the concept of household be replaced by a focus on economic linkages between household members, with non-household members, and changes in these linkages through time.

The Somali case is an exception to the feminist and development literature which sees economic development, settlement, and market integration as detrimental to women's economic participation. In the pastoral sector, women are confined to the domestic domain and have little control of productive resources. Settlement in town offers many cash-earning options

compatible with domestic responsibilities. Women's entrance into the public domain is facilitated by settlement in a Somali-speaking area presenting no linguistic deterrent to women's participation. The town's expanding population is a market for goods and services provided by women in the informal sector.

The study follows the economic recovery of destitute former nomads who have few job skills, little education, and limited fluency in Swahili. Employment is marginal; several household members work to obtain basic subsistence. The process of integration into the settled economy involves: receiving famine relief, cash-earning in the informal sector, wage employment or prestige trading. The goal is diversification with investments in both the pastoral and settled economy. The town will continue to draw population from pastoral areas. Continued development and training are necessary to increase opportunities for the marginally employed former nomads. (Author's abstract in UMI Dissertation Abstracts)

Messer, Ellen

1989 Seasonality in Food Systems: An Anthropological Perspective on Household Food Security. In Seasonal Variability in Third World Agriculture, David E. Sahn, ed., pp. 151-175. International Food Policy Research Institute, The Johns Hopkins University Press. Baltimore and London.

Through an analysis of anthropological studies, Messer explores the significance of food insecurity by examining (1) ethnographic evidence of seasonal hunger and (2) concepts and methods that can be used to both identify and address seasonal food problems. The author reviews literature pertaining to the adaptation of forager societies, pastoralists and peasant households to periodic food shortages. She next examines anthropological literature on some causes of seasonal hunger, including male migration, cash crop production and deterioration of ecological conditions of production. She then turns to more specialized anthropological approaches to the topic of seasonal food insecurity and adaptation and examines food strategies for coping with hunger, including dietary diversification through foraging, home food production, income diversification, food flow through gifts, household consumptive behavior, and adjustment of household size and composition. In the following section, Messer reviews literature from materialist (ecological and economic) or cognitive (cultural or symbolic) frameworks on the subject of seasonal food habits. In a concluding section, she uses anthropological literature which has illuminated the complexity of overcoming seasonality and achieving food security to draw a number of conclusions and to present possibilities for future research.

Moris, John R.

1989 **Indigenous versus Introduced solutions to Food Stress in Africa. In Seasonal Variability in Third World Agriculture: The Consequences for Food Security. David E. Sahn, ed., pp. 209-234. Published for the International Food Policy Research Institute. The John Hopkins University press. Baltimore and London.**

Based on data from East and Southern Africa and adduced from data in the Sahel, the author examines how indigenous and introduced technologies utilized by households address marked seasonal variability in the food supply in Africa. He considers the indigenous production strategies of diversification, growing of root crops, exploitation of vertisols, livestock enterprises, bush collecting and off-farm income. Three household social and economic adjustment mechanisms are discussed: reciprocal economic exchange, gender-linked allocation of farming tasks, and varying modes of household integration. Moris evaluates introduced solutions including specialized commercial production, mechanization, and irrigation and finds that introduced solutions to seasonal food insecurity are not better than indigenous strategies except under favorable conditions. Through a comparative evaluation of indigenous and introduced strategies, Moris concludes that indigenous production strategies generally outperform introduced options in two key areas; the return obtained from labor at planting time and cash outlays which are required at the critical hunger periods. These findings explain the rejection of recommended technical packages in African development projects. Insecure funding from outside service agencies on top of natural risks make entry into modern agriculture only for those with a cushion of nonfarm incomes.

Mortimore, Michael

1989 **Adapting to Drought: Farmers, Famines and Desertification in West Africa. Cambridge University Press, Cambridge.**

Thirteen years of research in drought-prone rural areas in the semi-arid zone of northern Nigeria is the basis for this book. Patterns of adaptive behaviour observed among Hausa, Ful'be and Manga communities in response to recurrent drought in the 1970s and 1980s are described. The book begins with a description of aridity and desertification in Africa and follows this with an examination of productive years and in chapter 3, a description of drought in the 1970s. In following chapters, Professor Mortimore examines household adaptive responses to drought. He draws parallels between the resilience of semi-arid ecosystems and the adaptive strategies of humans who live in these areas. In the final chapter he examines policy directions which would strengthen the resiliency of human systems to cope with uncertainties caused by periodic failures of production.

Musgrove, Philip

1985

Household Food Consumption in the Dominican Republic: Effects of Income, Price, and Family Size. Economic Development and Cultural Change 34(1):83-102.

Between May 1976 and April 1977 the Central Bank of Dominican Republic conducted the first nationwide survey of household income and expenditure ever taken in the country. Applying the sample probability of 1:200 led to a sample size of 4,028 households, 1,681 urban and 2,347 rural. Because food consumption accounts for slightly more than 60% of total spending at median income levels, food expenditure and consumption data was carefully surveyed. The food items were grouped into 12 categories, excluding alcoholic beverages and meals away from home. An examination of the food budget shows that meat and milk replace beans and yuca as income rises, and cereal products (chiefly rice) are preferred over both tubers and beans as sources of calories. Although cereal products drop in importance from 27% to 3% of the food budget for families of three people, they decline only from 30% to 12% of the budget for families of seven people. Rice alone appears to account for one-fourth of the total food intake. Another interesting find is that consumption of commercial eggs are affected more by family size (twice the effect of domestic eggs) and price (eight times that of domestic) but not by income. This effect may be more general than eggs, since eggs were the only item separated into commercial and domestic. The article also discusses prices and public policy, particularly the examples of milk, and the differences between home production and purchased foods.

Nabarro, David, Claudia Cassels and Mahesh Pant

1989

Coping Strategies of Households in the Hills of Nepal: Can Development Initiatives Help? IDS Bulletin 20:68-74.

While the majority of households in Nepal depend on agriculture for their survival, many do not produce sufficient food grain to meet annual household needs. The subject of this paper is an examination of the variety of coping strategies used by families to obtain the food they need, and secondly the extent to which these strategies have been supported by an Integrated Rural Development Programme (IRDP). The impact studies showed that through the program, geared towards increasing agricultural and livestock production, had improved the well-being of some households, particularly those cultivating more than one hectare. Increased cash earnings opportunities offered the greatest benefits to the income earners themselves, primarily men. The authors conclude the article with a discussion of the lessons learned from the impact studies and their implications for development planners. With adequate rainfall, continued efforts by external agencies supporting development of district level institutions and infrastructures, can have significant impact on household well-being. Development agencies need to

continue to focus on poor households and their survival coping strategies, and should offer a range of inputs, services and welfare provisions to help these poorer families cope.

Obbo, Christine

1985 Food Sharing During Food Crisis: Case Studies from Uganda and Ciskei. In Food Systems in Central and Southern Africa, Johan Pottier, ed., pp. 265-279. School of Oriental and African Studies, University of London, London.

"Kinship is eating" is a Kiganda saying which embodies the concept of sharing food. Food sharing and strategies for dealing with scarcity and high food prices is examined in four urban Ugandan families living in Kampala in the first section of the paper. The main strategies employed were urban food production and reliance on rural relatives. In order to establish whether geographical distance was influential in food sharing, families were chosen who came from four different regions in Uganda. In all four cases rural-urban networks were maintained and intensified during times of food shortages. In the second section, food sharing in the territorial area of Ciskei, in the village of Cata in South Africa is examined. The author found that during times of acute food shortages, visits from neighbors intensified, and reluctant food sharing and forced reciprocity was the norm. These were reinforced through preying techniques, in which children played a large part. The Cata case illustrates a gender and age differential access to food and shows evidence that women's and children's nutritional needs are not being met.

Podhisita, Chai

1985 Peasant Household Strategies: A Study of Production and Reproduction in a Northeastern Thai Village. Dissertation. University of Hawaii.

Productive and reproductive strategies are viewed as peasants' responses and adjustments to their needs and goals as well as to changes taking place in their environment. Under the precarious agricultural conditions, characterized by poor soils and erratic rainfall, coupled with diminishing resources resulting from sustained population increase, peasant households are found to employ several productive strategies that are open to them in order to achieve and maintain a desirable standard of living. These strategies range from adoption of new agricultural techniques suitable to the physical conditions in which they work, to cash cropping and involvement in non-agricultural activities available within as well as outside the village. Reproductive strategies are characterized by different nuptiality patterns among women from households of different economic statuses and by widespread practice of family limitation, especially among the younger couples. An analysis suggests that production factors play a dominant

role in the relationship between household production and reproduction. The findings allow an interpretation in light of the adaptive model by which productive and reproductive strategies are viewed as "peasant adaptation." They also have considerable theoretical and policy implications. (Author's abstract from UMI Dissertation abstracts)

Pyle, Alison S. and Omer Abdel Gabbar

1989 Household Vulnerability to Famine: Survival and Recovery Strategies Among Zaghawa and Berti Migrants in Northern Darfur, Sudan. Paper presented at the Farming Systems Research/Extension Symposium, October 8-11, 1989 The University of Arkansas in collaboration with Winrock International Institute for Agricultural Development.

An understanding of household risk-reducing strategies during stress periods is important for understanding vulnerability to famine. Another significant factor in vulnerability to famine is the opportunity structure which determines households' access to resources in the community and to alternative sources of income. In this study, the authors look at the impact of widespread famine on traditional coping strategies in households which migrate to the town, El Pasher, during the 1984-85 famine in northwest Sudan. The response of two ethnic groups to famine are compared, the Zaghawa and the Berti. Research which examines the role of intracommunal institutions in normal times and indigenous support mechanisms during famine is needed. The authors make suggestions for follow up research, some of which should concentrate on (1) the strategies of households remaining in the town, (2) whether a shift towards investment in market oriented activities has excluded use of community resources and traditional institutions, and (3) intrahousehold vulnerability to famine.

Rahmato, Dessalegn

1987 Peasant Survival Strategies in Ethiopia. Disasters 12:326-344.

This paper focuses on peasant farmers in Ethiopia, and their behaviour as serious famine sets in. In many of the last seventeen years the crop yields on rain-fed plots in drought-prone areas have failed to meet the requirements of the peasant farmers and their families. Significant numbers have received food aid either at distribution points or in the shelters which developed in 1973 and 1984. Seeking food relief from external sources, however, is the last resort of peasants who have managed their dwindling resources for months, if not years, in order to survive. (Author's abstract)

Reardon, Thomas, Peter Matlon and Christopher Delgado
1988 Coping with Household-level Food Insecurity in Drought-affected Areas of Burkino Faso. *World Development* 16(9):1065-1074.

The paper examines strategies used by rural households in the Sahelian and Sudanian zones of Burkino Faso to ensure food security on the face of drought-induced cropping shortfalls. It finds that three-quarters of the average household income in the Sahel sample and half of the same in the Sudanian sample come from non-cropping sources. These are more diversified regionally and sectorally in the case of the Sahel. The latter's non-cropping income is less covariant with the local cereal economy than is the case of the Sudanian sample. Moreover, much greater food aid was targeted to the Sahel for geographical reasons, without taking into account the more stable and higher level of purchasing power in that zone vis-a-vis the Sudanian zone. (Author's abstract)

Renkow, Mitchell Adam
1988 Household Inventories and Marketed Surplus in Semi-Subsistence Agriculture. Dissertation. Agricultural Economics. North Carolina State University.

A theoretical model of semi-subsistence agricultural households was developed which explicitly accounted for the ability of households to store key food staples over the period between harvests. The model yielded a simple inventory demand equation in which carryout stocks are a linear function of current consumption of the stored commodity and the difference between its current and expected prices. These were interpreted as indicators of the strength of arbitrage and food security motives for holding stocks.

Using panel data from three villages in southern India, inventory demand equations for five groups of stored food staples were econometrically estimated. In all villages, food security motives generally dominated arbitrage motives in determining the level of inventory demand. Empirically significant arbitrage motives were found to exist only in the poorest of the three villages.

Comparative statistics analysis based on the theoretical model indicated that stocks and expected revenue from future production will have wealth (or profit) effects on current consumption, and that these affect the response of marketed surplus through their effects on consumption and via the price response of inventory demand.

Own-price elasticities of demand and marketed surplus for stored commodities were computed. To do this, the parameters of commodity demand were econometrically estimated using a

Rotterdam model. These were then combined with the structural coefficients of inventory demand and outside estimates of supply response. In most cases profit effects were sizeable. Where the share of stocks in household wealth was quite large, profit effects were strong enough to cause demand elasticities to be positive. Computed marketed surplus elasticities were quite variable, both within and across villages. In several instances these were found to be negative.

Comparison of these elasticities with those computed using traditional methods indicated that the traditional method yields larger elasticities for both commodity demand and marketed surplus. In several cases these differences were dramatic, and most important being that all marketed surplus elasticities calculated using the earlier method are positive. (Author's Abstract from UMI Dissertation Abstracts)

Swinton, Scott M.
1988 Drought Survival Tactics of Subsistence Farmers in Niger. Human Ecology 16:123-144.

Previous research into drought-response tactics has tended to be undertaken after the fact, and hence has been forced to be impressionistic. This study quantifies the importance of farmer drought-response strategies in south-central Niger based on a survey which began during the drought of 1984. Livestock sales, food aid, temporary migration, remunerative non-agricultural activities, and loans were the principal drought-survival tactics employed. (Author's abstract)

Taal, Housainou
1989 How Farmers Cope with Risk and Stress in Rural Gambia. IDS Bulletin 20:16-22.

As a result of continuing food crises in sub-Saharan Africa, there is a need to identify and analyze various sources of farm risk and how households cope with these risks in order to see how development programs can best help them. To examine the varieties of strategies employed, the author presents the findings of 15 months of fieldwork in two villages (Dobo and Kundam) which are located in MacCarthy Island and Upper River Division of The Gambia, and combines this research with an examination of secondary data. In the first section, the range of risks faced by farmers is presented, including rainfall variation, price variation, access to markets and food, and regular seasonal stress. In the second section, farmers responses to farm risk are analyzed, focusing on choices in cropping pattern, storage of food crops, reduced consumption, off farm work, asset disposal, community and kinship ties, and the evolution of household strategies in recent years. The author concludes that because farming has become riskier and vulnerability has increased, especially among the assetless and

poorest, coping strategies have diversified. Policy makers need to recognize the trends and devise interventions to help farmers cope with their situations.

Tobert, Natalie

1985 The effect of Drought among the Zaghawa in Northern Darfu. Disasters 9:213-223.

Through an analysis of data gathered in two different years in northern Darfu, the author examines changes in traditions and customs of Zaghawa potters and blacksmiths in response to drought. Through an examination of subsistence activities to crisis over the period of one year, the author considers the question of whether patterns may be said to exist for predicting crisis. The paper is organized into four parts; a description of the Dar Zaghawa from 1965 to 1972, the traditional village life as it was in 1982, a month by month chronology of events and household agricultural and craftwork strategies during 1984 to 1985, when drought and food shortages reached crisis levels, and finally a discussion on the invisibility of the famine in urban areas. In the concluding section, through graphs Tobert illustrates the three cycles of change during the last twenty years and ends with a discussion of the responses to the 1984 drought. She concludes that drought does not affect everyone equally. The severity of a drought may be underestimated by outside administrators because those affected may be living in the compounds of relatives in urban areas and others affected may be in rural areas out of sight of government officials and aid workers.

Toulmin, Camilla

1986 Access to Food, Dry Season Strategies and Household Size amongst the Bambara of Central Mali. International Development Studies Bulletin 17(3):58-66.

This article discusses strategies for dealing with food shortage in Bambara among marginal and high risk farmers. The advantages for these villagers of the large household size are: the diversification of income sources from family members; and economies of scale that can be afforded by the larger size of family assets, such as oxen ploughteams, and labor for well-digging. The two seasons (wet and dry) influence all aspects of life, including the eating patterns. During peak labor season, food is more substantial to supply energy needs for production. In this study, 15 out of 29 households suffered food deficits both years. The traditional methods of coping with this shortage, such as pawning children to the wealthy, or raiding other villages, have given way to migration of young men and diversification of income sources during the dry season. Help to those in need is still an important element of Bambara society.

Upadhyay, Kumar R.

1988

Forestry and Food Security in the Densely Populated Upland Ecosystems of the Himalayas. Satellite Paper, February 14-20 1988. Rome, Food and Agriculture Organization

Fragile ecosystems, unprecedented population growth, inadequate rural development and limited off farm employment has led to a steady decline in the capacity of land in the Himalayas to provide for people's basic needs. Three types of farming systems can be found in the region; pastoral-transhumance, subsistence level crop and animal husbandry and early commercial farming.

Pastoral-transhumance economies and subsistence farmers rely heavily on forested areas for animal fodder and food and fuel for human use. The present trends which are bringing more marginal forest and pasture land under cultivation for food will result in decreasing areas for fodder and fuel production. In spite of numerous constraints to achieving stable food production and security in the Himalayas, the author sees opportunities for solving the existing food problems. These opportunities include agricultural development not based on chemical fertilizers to allow integration of animal husbandry, prevention of further forest destruction, tree farming on marginal land and decreasing man/land ratio both through support of extant birth reduction plans, as well as planned out migration.

Von Braun, Joachim

1988 Effects of technological change in agriculture on food consumption and nutrition: rice in a West African setting. World Development 16(9):1083-1098.

This paper traces the effects of technological change in agriculture to production and income effects, and to consumption and nutritional effects. The study environment is West Africa (The Gambia). The technological change considered is various new modes of rice production versus traditional rice production. Main findings of this empirical analysis are the following: (1) It cannot be assumed that by focusing investment on a "woman's crop," one helps women farmers. The more a new technology increased labor productivity in rice, the more there was a takeover of the rice production technology by male producers, and the more the crop became a "communal" crop for household food security. Household income increased substantially. (2) Much of the increased income is spent on increased calorie consumption. It makes no difference for the degree of change in calorie consumption levels if change in real income is in the form of cash or subsistence food. (3) Technological change effects mediated through income are traced to increased food consumption (calories) at the household level

where it is found to significantly improve children's nutritional status, especially in the "rainy" season.
(Author's abstract)

- Walker, Thomas S. and N.S. Jodha
1986 How Small Farm Households Adapt to Risk. In Crop Insurance for Agricultural Development: Issues and Experience. P. Hazell, C. Pomareda and A. Valdez, eds., pp. 17-34. John Hopkins University Press, Baltimore.

The article begins with a description of farmers' risk management in South Asia, Central America, and East Africa, contrasting agroclimatic, socioeconomic and institutional contexts. Secondly, the author considers the efficacy of traditional risk management measures on stabilization of household income, concentrating on spatial diversification of crops, intercropping and tenancy. Finally, the authors comment on efficiency costs and the potential adverse effect on equity of traditional risk-adjustment practices. It is difficult to assess whether small farm households adaptations to risk are effective, primarily due to a paucity of data, but evidence shows it to be far from perfect. Crop and spatial diversification can enhance yield stability in some ecological settings, but intercropping by itself contributes little to yield stability. To consider crop insurance as an effective risk management strategy, more knowledge about the influence of crop revenue on consumption stability is needed. The authors are unsure that a public program of crop insurance is the answer to greater security, or even a step in the right direction.

- Watts, Michael
1988 Coping with the market: uncertainty and food security among Hausa peasants. In Coping with Uncertainty in the Food Supply, I. Garine and G. A. Harrison, eds., pp. 260-290. Clarendon Press, Oxford.

This paper examines the question of food supply and household subsistence security among peasant producers in drought-prone Northern Nigeria. The particular form of capitalist development there disrupted the cycle of peasant production. The author argues that because of the subsistence ethics that are embedded in a particular class structure, the historic expansion of commodity production among peasant communities has exposed some rural producers to market uncertainty in addition to the environmental vagaries that already threaten their biological survival. He uses the notion of moral economy (the pattern of authority, social relations, and surplus appropriation) to show how food security has been adversely effected by commoditization -- the partial or incomplete development of the market. Three issues are dealt with in detail: 1) adaptive flexibility (technical ways of

coping with rainfall perturbations); 2) household responses to food supply fluctuations; and 3) the complex intersection of seasonality, household differentiation, and the social relations of trade and food security.

Watts, Michael

1987 Drought, environment and food security: Some reflections on peasants, pastoralists and commoditization in dryland West Africa. In Drought and Hunger in Africa: Denying Famine a Future. Michael H. Glantz, ed., pp. 171-211. Cambridge University Press, Cambridge.

Emphasizing the changing character of pastoral and peasant production systems in semiarid West Africa, Watts first looks at land-use management and responses to environmental perturbations, such as drought in pre-capitalist communities. Farmers and herders respond sensitively to the ecological systems of which they are a part within their respective modes of livelihood. In this context he examines responses of Hausa farmers in Northern Nigeria to drought. Drought is recurrent and rainfall is variable in Sudanic savannahs and Hausa farmers have developed flexible sequential adjustments to rainfall variability which include two broad strategies, (a) the control of microclimate and (b) the sequential use of crop varieties (polyvarietal strategies) and management of lowland microenvironments. In the second section, Watts shows how "environmental problems in the Sudano-Sahelian regions can be understood in relation to the way in which political-economic change has fundamentally shaped, limited and ruptured certain patterns of land use". In the third section Watts uses data from Hausaland to show how food security is related to household inequality through an examination of (1) the cycle of reproduction in farm production, (2) the social relations of trade, particularly seasonal sequences of grain sale and purchases, and (3) the critical role of debt. Finally, the author speculates on the implications of local level work to an analysis of famines.

White, Cynthia

1986 Food shortages and seasonality in WoDaaBe communities in Niger. IDS Bulletin 17(3):19-26.

This article draws on fieldwork data to describe how the WoDaaBe, a pastoral Fulani group, deal with seasonality in their work patterns and food supplies. Pasturing and watering are the two most time-consuming tasks in herd management, with emphasis shifting from one to the other depending on the season. The peak labor period occurs at the start of the rains to ensure maximum benefit from the short wet season. High dry season labor demands coincide with food shortages and high cereal prices. This leads to sale of male animals before their optimum weight, or females before the

end of their reproductive period. This pattern of sales is equivalent to the sale of land by agriculturists and clearly indicates a downward spiral of poverty. Migrancy to find supplemental work rarely results in sufficient income to bring home savings. Data on fluctuations in nutritional status and weight change are analyzed to demonstrate that the transition between the dry and the rainy season is the most difficult time of the year for these pastoralists. Policy implications of this scenario are clear. Pastoralists will be a continuing drain on limited national resources unless viable herds at the household level are again built up.

Wisner, Ben

1989 Commodity Relations and Nutrition under Apartheid: a Note on South Africa. Social Science and Medicine 28(5):441-446.

The influence of commodity relations upon human nutritional status has recently received a good deal of attention in the context of Sub-Saharan Africa. This paper takes up the question for the case of contemporary South Africa. It is argued that the structure of racial capitalism in South Africa exaggerates the negative influences of commodity relations on nutrition. In the extreme physical and social environments artificially created by apartheid in both Bantustan and urban township, the survival strategies employed by parents elsewhere in Africa fail to safeguard the nutritional well-being of their children. Whereas elsewhere in this Special Issue Bryceson shows that commodity relations can have both positive and negative impacts on nutrition, the South African case reveals only the negative. (Author's abstract)

WOMEN AND FOOD SECURITY

Agarwal, Bina

1988 Neither Sustenance Nor Sustainability: Agricultural Strategies, Ecological Degradation and Indian Women in Poverty. In Structures of Patriarchy: State, Community and Household in Modernizing Asia. Bina Agarwal, ed., pp. 83-120. Kahli for Women, New Delhi, India.

This chapter seeks to examine the implications for women of India's post-independence agricultural development and resource use policies. The emphasis on growth over the past two decades has resulted in agricultural stagnation in several parts of the country combined with degradation of the natural resource base. In particular, the promotion of the green revolution with little attention to structural agrarian reform, and the lack of a sound approach to natural resource

management (forests, for example) are examined. The chapter is divided into four parts: 1) the burden of poverty -- women's unequal load (includes discussion of unequal access to food and health care, and some reasons for discrimination against women); 2) agricultural growth and women in poverty (including agricultural growth, poverty incidence, and gender specific effects); 3) women and ecological degradation; and 4) concluding comments. Pre-existing patterns of class and gender relations are related to the changes, if any, resulting from State policies.

Aidoo, Agnes Akosua

1988 Women and Food Security: the Opportunity for Africa. Development 2(3):56-62.

Agriculture is both the manifestation of failure in Africa's development and the major source of hope. The long-tested productive capacity of Africa's women must be liberated through their involvement in the search for sustainable food production, agricultural development, and nutritional security. The constraints to this must be measured against the opportunity cost of their invisibility, neglect, and marginalization. Women's strong role throughout history has not led to a strong political voice because their work is typecast as fulfilling only social reproductive roles with no real value. This misconception is held by both men and many women, and has led to the disproportionate allocation of resources to urban areas and export-oriented production while the broad concept of nutrition security has not been addressed by policy makers. The article discusses the particular contributions of women, the efforts to enhance their contribution (in Zimbabwe, Kenya and Cameroon), and the missed opportunities. The factors leading to an increase in women's workload (migrant men, shortages of fuelwood and water) and the deleterious effect of food aid on women's attempts to achieve food security in rural areas are addressed. The author concludes by prescribing how the power of rural women should be released in government planning, research and investment, and women's participation.

Beaman, Anne W.

1983 Women's Participation in Pastoral Economy: Income Maximization Among the Rendille. Nomadic Peoples (12):20-25.

The paper describes the economic roles of women in this pastoral nomadic society of Northern Kenya. The strategies of the society to keep population growth within the limits of camel herd size include limiting most marriages to a certain fourteen year age-set cycle, and prohibiting childbirth outside of marriage. The author shows how women use individual skills and opportunities in a variety of ways to

enhance their household's well-being. While men seek to maximize household capital with camel herds, women seek to maximize household income. Small stock is cared for by unmarried women in stock camps run by men. But upon marriage, women's role changes drastically to include home maintenance, control and distribution of livestock products, begging and maintaining mental records of reciprocal obligations that ensure distribution of wealth and survival of all in the community, and development of special skills that provide an income, such as midwifery.

Beck, Tony

1989 Survival Strategies and Power Among the Poorest in a West Bengal Village. IDS Bulletin 20:23-32.

This paper addresses survival strategies among the landless in West Bengal, India, focusing on areas in the village power structure already used by the poor for maintaining their survival. By strengthening these areas rather than introducing more radical alternatives at the village level, the poor can benefit by exploiting the present system. In the long run this will strengthen the system and could change the balance and structure of power. The article begins with a description of a Muslim village named Fonogram, 40 km from Calcutta and describes strategies utilized to ensure survival and gain power. Some less well recognized survival strategies, all undertaken by women and children, are discussed. These include use of common property resources, changes in eating and food preparation, and share rearing of livestock and mutual support networks. Policies to support poor people's strategies, particularly women and children, need to take into account the high degree of centralized planning, male dominated bureaucracy, and overburdened village extension workers. The author concludes that even the poorest people, especially women and children, are neither passive nor apolitical and are active in their household survival strategies. Measures to support and improve their present strategies may be of more use to them than externally imposed schemes.

Dey, Jennie

1984 Women in Food Production and Food Security in Africa.
Food and Agriculture Organization of the United Nations.
Rome, 1984.

The paper begins by outlining the changes in food security assistance policies from technical to socio-economic, and the associated change to an emphasis on women in food production. A history on FAO's activity in this area is given. It then examines food production constraints specific to women, and the need to lessen the workload at the same time as increasing the benefits to women and their families. After

briefly reviewing women's responsibilities for cash and staple crop production, for secondary crops and gathered food, for animal production, fisheries and food handling along with the constraints and possible remedies, it outlines possible governmental and international policy improvements and research. The paper is designed to stimulate recommendations that are pertinent to women's role in food production and security.

Jiggins, Janice

1986 Women and Seasonality: Coping with Crisis and Calamity. IDS Bulletin 17:9-18.

In times of acute stress relating to seasonal adversities, evidence of female mortality and morbidity rates suggests a wastage of females as necessary to survival of the social system as a whole, in spite of the stresses this places on family survival. Managing uncertainty necessitates a flexibility and range of options to meet fluctuations in resource endowments, food entitlements, work and income, climatic variation and unreliability of government services. This study looks at the differential contributions of men and women to meeting these stresses, in particular the contribution of female production, labour, and domestic domain services. Section II examines seasonal coping strategies and section III explores strategies employed in the face of relentless adversity, such as several years of bad harvests. The descriptive information is used to make a preliminary sketch of the role women play in the maintenance of livelihood in the face of stress and calamity. Results show that female headed household networks are characterized by resilience and a more critical study of their flexibility may show they are the 'survivors.'

Katona-Apte, Judit

1988 Coping Strategies of destitute women in Bangladesh. Food and Nutrition Bulletin 10(3):42-47.

This article provides a description of the survival strategies of very poor women in Bangladesh, including networking, buying and selling goods, preparing foods for sale, bartering, selling their own and their children's labor, fishing and gathering food and fuel, and money lending. Katona-Apte stresses that programmes can build on successful coping strategies and provides examples of how this might work, including extending women credit for income-generating schemes. Like Rogers and Youssef, she mentions the experience of the Grameen Bank in lending to poor women to demonstrate that they are good credit risks. The article outlines the cultural and economic reasons why so many women

are destitute in Bangladesh. It also describes the disproportionate and oppressive social burden they carry in their patriarchal society. (Author's abstract)

- Schoepf, Brooke Grundfest and Claude Schoepf
1988 Land, Gender, and Food Security in Eastern Kivu, Zaire. Chapter 6 in Agriculture, Women and Land, The African Experience. Jean Davidson, ed., pp. 106-130. Westview Press, Boulder and London.

This chapter focuses on historical and contemporary phases of land tenure in Eastern Kivu, Zaire in order to consider the interrelationships of food production and nutrition with class formation and international interests. Changes in land law have abolished claims of clans and villages to ancestral lands in perpetuity, allowing all Zairians to have equal access to land. In reality, the land allocation system has been manipulated by the powerful, wealthy and influential into a pattern of capitalist land appropriations. The article examines the results of this capitalist expansion on (1) peasant farming in Kabare, Eastern Kivu, (2) wage employment on plantations producing export crops and (3) the relationship between the production of cash crops, hunger and the subordination of women. Within peasant households, this process has resulted in unequal gender division of labour tasks and male dominance in resource control which jeopardizes the family food supply. Gender is a crucial factor in the relationship of peasant farming systems to capitalist development in Zaire. The crisis of peasant reproduction in many parts of Africa can be understood by this micro-level study in Zaire, where problems are related to "patterns of landholding, political power and gender relations as these have emerged over the past one hundred years."

- Schrijvers, Jok
1988 Blueprint for Undernourishment: The Mahaweli River Development Scheme in Sri Lanka. Structures of Patriarchy: State, Community and Household in Modernizing Asia. Bina Agarwal, ed., pp. 29-51. Kali for Women, New Delhi, India.

The author points out the irony that the majority of undernourished people in the world live in the rural areas where food is produced. Recognizing that changes in the position of women are related to undernutrition, the paper discusses first the use of sex-specific data in view of access to food issues. This is then related to changes in the relations of production between men and women. The case of the Mahaweli River Development Scheme in Sri Lanka is presented as an example of rural settlement schemes and rice development projects that have contributed to nutrition

problems in many countries. Conclusions are that sex-specific data as well as information regarding power relations between the sexes are important in understanding undernourishment. Women suffer not only from the lack of material things, but from the lack of power to secure the things that could nourish them. Planning in development schemes often cut these women off from their productive resources, and it is this undermining of autonomous access to food rather than a need for training that causes undernourishment.

REGIONAL FOOD SECURITY

Bryceson, Deborah Fahy

1989 Nutrition and the Commoditization of Food in Sub-Saharan Africa. Social Science and Medicine 28(5):425-440.

During the past decade, Africa, more than any other continent, has been associated with famine and malnutrition. The Sahelian drought of the early 1970s, the Wollo and Karamoja famines and most recently, mass starvation in Ethiopia, have followed one another in rapid succession. The term 'food crisis' continually crops up in the popular and academic press. An increasing number of researchers probe possible causes; many seek a systematic reason for the present situation. One working hypothesis is that increasing commoditization of food has undermined Africa's food systems. This paper does not purport to prove or disprove this. Less ambitiously, its aim is to draw attention to the inter-relationships between commoditization and physical and social aspects of African food systems, tracing their possible effects on the nutritional status of the African population. In so doing, some of the complexities of developing food production and consumption in the transition from peasant societies to more urban-based national economies become evident. The paper is divided into three main parts: a discussion of conceptual categories and general background information about Sub-Saharan African food zones and commodity and factor markets; a review of literature on rural food availability and nutrition; and a review of urban food availability and nutrition. (Author's abstract)

Burki, Shahid Javed

1986 The African Food Crisis: Looking Beyond the Emergency. Journal of Social Development in Africa 1:5-22.

This paper on the African food crisis is presented in four parts. The first section focuses on the current nexus of problems that has created an endemic economic crisis in many African countries, the background against which both the

drought and certain domestic policies have operated. The second part introduces the concept of entitlement, a concept that is used to understand better the human response to a diminished ability to produce or purchase food. This section looks at the food crisis as an income and productivity crisis, rather than food shortages per se. In the third section, a formulation is introduced that describes three stages of disinvestment among affected people, stages that have been observed historically as a result of drought and famine. The last section examines possible solutions and the most appropriate national and international response to the various stages described. (Author's abstract)

Campbell, David J.

1987 Strategies for Coping with Severe Food Deficits in Northeastern Africa. Northeast African Studies 9(2):43-54.

In this article, Campbell argues that recent food deficits in northeastern Africa are caused by a combination of "long-term structural change in the pattern of rural life" and "intense short-term disturbances such as drought and war." These changes are the results of increased integration of village production systems into the world economy. As villages move into the world economy, decisions made at the district or national level undermine local authority and fail to take into account local complexities of rural production systems. "The focus of this paper is on processes by which rural communities have become more vulnerable to food shortages in terms of disruption of village-level production systems." The author looks at traditional economic, social, and environmental coping strategies and shows how these strategies have been undermined in recent years as village systems become integrated into national and international systems. He argues that famine conditions in northeast Africa result not just from lack of rainfall, but from a "synergistic effect of a number of long- and short-term processes on the ability of food production and distribution systems to feed the people."

Demery, Lionel and Tony Addison

1987 Food Insecurity and Adjustment Policies in sub-Saharan Africa: A Review of the Evidence. Development Policy Review (5):177-96.

This article reviews evidence from sub-Saharan Africa to determine to what extent IMF and World Bank policies have increased food availability through either greater food production or greater food imports, how these policies have affected food consumption, and are there tradeoffs in balance of payment adjustments and food security. The authors first discuss the dimensions of food security in Sub-Sahel Africa (SSA) and follow with an outline of the major features of

stabilization and adjustment. This is followed with an examination of the effects of these policies in SSA and they end with a comparison of alternative policy approaches. The authors conclude that although structural adjustment policies have increased incentives for increasing food production, it is uncertain if they have affected the actual food supply, and the main instrument of that policy, food price increases, have negatively impacted the food security of vulnerable groups. The authors recommend that more emphasis be given to increasing agricultural productivity which would enhance the food supply without a significant increase in food prices. While inclusion of the food-insecure population in the traded-goods sector would be a good strategy for achieving balance of payments equilibrium as well as food security, the authors concede that it would be economically difficult during periods of austerity and politically difficult to implement. To date IMF has avoided income distribution issues, leaving them to the recipient governments and the policies of SSA countries over the last few years do not leave much hope that the food-insecure will be protected during times of austerity and adjustment.

FAO

1987

Food Crop Production in Rainfed Conditions in Context of Food Security. Report: Regional Commission on Food Security for Asia and the Pacific. Bangkok, Thailand Report No: FAO-RAPA-APCFS/87/s

Rainfed areas of the Asia-Pacific region include both rainfed wetlands and rainfed drylands. Overall, yields of cereals and other crops in rainfed areas are about half to one-third of those in irrigated areas in the Asia-Pacific region. Food production in rainfed areas is at a considerable disadvantage compared to irrigated areas because both the amount and timing of rainfall is highly variable from year to year. Consequently, income levels of rainfed farmers are generally lower than those of irrigated land farmers and consequently access to food is lowered. Policy recommendations for increasing food security include both expanding irrigation and increasing yields in rainfed areas. Improving rainfed food production can be accomplished through generation and adoption of appropriate technology, improving extension support, giving greater relevance to integrated farming (particularly a synergistic blend of crops and livestock), watershed development, contingency crop planning in the event of drought and floods, alleviation of socio-economic constraints, and technical cooperation among countries of the region.

Fleuret, Anne

1986 Indigenous Responses to Drought in Sub-Saharan Africa.
Disasters 10:224-229.

Drought is a frequent occurrence in contemporary sub-Saharan Africa, and the existence of periodic drought can be documented over hundreds of years. As a consequence of the routine rainfall shortages that affect them, agricultural and pastoral societies have developed a number of social institutions and mechanisms for bridging temporary food production shortfalls caused by drought. Drawing on the literature and field data from southeastern Kenya, this paper discusses a number of regular indigenous responses to short-term drought in sub-Saharan Africa. Changes in these patterns in the present day are also discussed. It is concluded that market-based responses are now the most important strategies, but that traditional institutions remain significant and contribute to the viability of drought-affected societies. (Author's abstract)

Glantz, Michael H.

1987 Drought and Economic Development in Sub-Saharan Africa. In Drought and Hunger in Africa: Denying Famine a Future. Michael H. Glantz, ed., pp. 37-58. Cambridge University Press, Cambridge.

"The purpose of this chapter is to remind those concerned with economic development issues how drought can, and often does, affect the process of development in sub-Saharan Africa." The author considers the relationship between drought and land quality and acreages planted. Crops planted for export have been insulated from drought because they have been recipients of high quality inputs, and are located in better watered more favored agricultural areas. Migration to urban areas has increased during times of drought. Food imports to feed urban populations usually include wheat and rice, which alters tastes, and subsequently the food preferences of the urban population change from traditional crops of millet, sorghum and cassava to these imported crops, results in less demand for locally grown crops. Governments which resort to import substitution by growing wheat and rice are replacing traditional cultivated crops with new crops which require mostly irrigation and inputs. To understand why countries in arid and semiarid areas have difficulty developing their economies, the implications of recurrent drought must be considered along with other relevant factors. This chapter has identified some ways that drought has affected the food balance system and the development process.

Jamal, Vali

1988

Getting the Crisis Right: Missing Perspectives on Africa.
International Labour Review 127(6):655-679.

This paper attempts to exonerate the African governments of some of the blame heaped on them for engineering their food production crises. The first section considers the main characteristics of the African countries, separating the roles of export and food crops and further dividing food crops into subsistence and sales components. From this, the notion of "three crises" that afflict Africa are derived; the food production crisis, the urban supply crisis, and the external crisis. These crises are discussed in the second section, with particular emphasis on food production. An examination of the alarmist view of the crisis and the nuances that nullify a large part of it are also discussed. The third section deals with the role of prices and the governments in these crises, and the final section presents the conclusions. Instead of blaming internal prices for the crises, the problem is set in the context of declining external markets and prices. The real tragedy is that the possibility of external assistance has become increasingly conditional on the willingness of governments to make reforms that lead to plummeting exchange rates and rising prices. But these reforms will be insufficient as long as the long-term technological problems in the smallholder agriculture remain.

Jayne, Thomas S. and Nicholas Minot

1989

Food Security Policy and the Competitiveness of Agriculture in the Sahel: A Summary of the "Beyond Mindelo" Seminar.
Working Paper No. 32, MSU International Development Papers.
Department of Agricultural Economics, Michigan State University.

This report is a summary of the USAID sponsored conference on food security policy and competitiveness of agriculture in the Sahel, "Beyond Mindelo." The conference was attended by representatives of USAID, the World Bank, International Food Policy Research Institute, European and American universities, development organizations, and government agencies to discuss recent implications of research in the Sahel. Some of the significant findings revealed at the forum are the following. Because a significant portion of rural households depend on local food markets for their food security, higher grain prices have a negative impact not only on urban consumers, but on large segments of the rural population as well. Rice plays an important role in the diets of the Sahelian poor and its proportion of grain expenditures appears to be constant across rich and poor income classes. Furthermore, rice consumption is insensitive to price and is driven by urbanization. Interrelated

production and marketing constraints prevent rural households in the Sahel from producing a grain surplus. Recent research findings have shown that privatization has not filled the vacuum left by the state withdrawal from the market. Existing empirical data questions the viability of a regional protected cereals market in the Sahel, however, policy must still deal with the concerns that were the impetus behind the protected market proposal. Finally, although there was agreement that freer trade within the Sahel and West Africa in general was advisable, there was a lack of consensus on the feasibility of insulating domestic markets from world markets.

Karner, Hartmut

1988, The African Food Crisis: Another Look Beyond the Emergency. Journal of Social Development in Africa 3(1):71-81.

The author refers to an article by Shahid Burki (Vol 1(2), 1986) to introduce a discussion of the problems associated with transferring European/North American modes of production to Third-World countries. Sections dealing with the green revolution, transnational companies, oppression of small peasants, food aid, world culture, and effects of monocultural thinking all contribute to the author's conclusion that food security programs are a promising solution. These programs would enable small peasant farmers to produce food and surplus for income without using expensive chemical inputs and hybrids. The article points out that the viability of ecologically-sound alternatives to industrialized agriculture are now recognized even in industrialized countries. In Africa, this green renaissance, as opposed to green revolution, would favor the poor and starving but also take into account the national economy. These food security programs would be based on a set of five principles which are outlined in the article.

Koester, Ulrich

1987 Market Integration in Southern Africa: A Route to Regional Food Security. Ceres 20(4):13-16.

The author explores whether regional cooperation among African countries could contribute to two aspects of food security that he defines: 1) real income being too low to provide target consumption for everyone, and 2) fluctuations in real income as a result of variations in production and prices. He also investigates the scope of the SADCC (Southern African Development Coordination Conference) approach to improving food security in the region. These countries are often prepared to accept lower GNP if food security is thereby improved. He argues that regional coordination of policies could make national food policies more efficient and lead to higher real incomes. He also

examines externalities and economies of scale, such as agroprocessing industries which could be exploited to promote food security. Regional market integration might be preferable to worldwide for reasons other than purely economic, and he analyses this option analytically for the SADCC countries. The main obstacles to regional cooperation could be overcome by joint projects complemented by fair sharing of costs and benefits.

- Matiza, Tabeth, Lovemore M. Zinyama, and David J. Campbell
1989 Household Strategies for Coping with Food Insecurity in Low-Rainfall Areas of Zimbabwe. In Household and National Food Security in Southern Africa, Godfrey D. Mudimu and Richard H. Bernstein, eds., pp. 209-221. Proceedings of the Fourth Annual Conference on Food Security Research in Southern Africa, October 31-November 3, 1988. University of Zimbabwe/Michigan State University Food Security Research Project, Department of Agricultural Economics and Extension, Harare, Zimbabwe.

This paper is an extension of an earlier paper on strategies for coping with food insecurity in rural Africa in general, and specifically in the SADCC countries (Zinyama et al., 1987). In the present paper the authors examine the coping strategies of a small sample of rural families in low-rainfall areas which are subject to regular food shortages and pay particular attention to the main gender and intervillage differences in strategies. In the first section some of the principal theoretical and conceptual issues in household coping strategies are summarized. The second section outlines research methodology, and in the third section preliminary results of the research from data collected in the two villages in the southeast and one village in the northwest of Zimbabwe are discussed.

- Maxwell, Simon
1989 Food Insecurity in North Sudan. Institute of Development Studies, Discussion Paper #262.

Food security planning must begin with an analysis of 'who is food insecure and why.' These questions are neglected, at least in Sudan. The paper helps fill the gap, by assembling information on the causes, dimensions and characteristics of food insecurity in North Sudan, excluding the war torn South. A model of food insecurity is presented which focuses on the inter-connection between poverty, malnutrition, and vulnerability. This is then applied to North Sudan, where a combination of long-term processes and short term shocks have resulted in worsening food insecurity. Over two million people are estimated to be chronically food insecure, with another seven million subject to transitory food insecurity: this is half the population of North Sudan. In order to

produce a disaggregation by region and socio-economic group, a programme of 'Rapid Food Security Assessments' was carried out in nine communities across North Sudan. Seven main groups of food insecure people are identified and their numbers plotted down to the Provincial level. Resource-poor households in the rural areas and the urban poor form the largest groups, concentrated in Dafur, Khartoum and Kordofan. The paper ends with a review of food security interventions. (Author's abstract)

Ouma, Desterio Ernest

1987 Small Farmer Food Production and Security: A Response to Seasonal Food Supply Shortages in Kenya. Dissertation. University of Pittsburgh.

One of the basic goals of any developing country should be "adequacy" or "self-sufficiency" in food supply. This goal is vital because it is the main channel through which persistent hunger and malnutrition can be reduced or overcome with appropriate governmental interventions. It is also important because of the rapidly growing populations of developing countries that greatly increase food demand. In most developing countries, therefore, emphasis is being increasingly accorded to food production or food security programs in order for the respective nations to live up to this challenge.

The purpose of this study is to examine the performance of the Kenyan food sector with a specific focus on the country's small farmers during a period of twenty years since independence. The major components of the study, namely, production, marketing, and consumption are examined along with related aspects impacting on the agricultural sector in particular and the Kenyan economy as a whole.

In connection with the above, and with the realization that small farmers constitute the vast majority of the country's food producers, the respective findings and recommendations of the study as stated in chapter six are aimed specifically at improving food production capacity of this category of farmers. The cultivation of crops that are both economical for them to produce and which are also staples in their respective areas are preferred over predominantly commercial varieties.

The specific findings of the study, however, are that Kenyan food production has generally been declining while consumption has been increasing at a rapid pace and also that although the government has been making efforts to help small farmers in the form of improved incentives and services, these are still inadequate. The needs of the most deserving farmers (small farmers) are still not being met.

In order for the goal of food supply security to be achieved in Kenya, political and administrative support for small farmers throughout the country will be inevitable in the short term. In the longer term, efficient food production in the country will probably have to be determined by market forces and appropriate fiscal policies for the agricultural sector as a whole. (Author's abstract from UMI Dissertation Abstracts)

Pollock, Nancy

1986

Taro and Timber: Competing or Complementary Ways to a Food Supply. In Shared Wealth and Symbol: Food, Culture, and Society in Oceania and Southeast Asia. Lenore Manderson, ed., pp 87-108. Cambridge University Press, New York.

This paper examines the direct mode of food production for the main Pacific Islands in terms of the shifting agriculture land use. The author argues that the forested areas provide a third alternative to both the risky subsistence farming and the dependency of solely purchased food -- namely an economy that is based on both subsistence and cash. Currently the proportion of the labor force engaged in agriculture is declining, while increasing numbers are seeking wage employment. This employment should be based on a renewable resource such as forestry replanting schemes, as well as the production of currently imported food, such as cereals, meat and sugar. Culturally, the population of the islands do not aspire to be excellent farmers, but rather to education and a steady wage job. The forest is an integral part of the production system of shifting agriculture, as well as home of ancestral spirits, and source of wood, and wildlife. But exploitation of forests by outsiders for profit has been common in the islands, so logging to provide employment must be pursued with caution and careful planning. Smaller-scale, locally-funded operations would contribute to skill development, self-reliance, and have a less harmful ecological impact. A balanced program of continued shifting agriculture combined with limited forestry development that would allow both taro and timber to coexist would provide a more varied and nutritious diet and would also help reduce the trade imbalances caused by the imported foods.

Ramadan, Bassam Ismail

1986

Food Security in the Arab World: Its Significance and Means of Attainment. Dissertation. Agricultural Economics. Cornell University.

The rise in per capita incomes all over the Arab World has induced a shift in food consumption towards livestock products. In order to assess the impact of these changing food habits on the future demand mix and to help determine

adequate policies to secure supplies, projections of production and consumption to the year 2000 were computed for most Arab countries. Logarithmic trend equations were fitted to the 1961-83 data on total cereals, wheat and other cereal grains. The results of these projections indicated that, based on trends in consumption and production, the future cereals deficit will be increasingly composed of grains utilized as feed rather than directly as food.

The regional deficit in total cereals was projected to reach 72.9 million tons in the year 2000. Because of declining oil revenues and the effect that this may have on the future demand situation, it was necessary to look at a modified set of consumption projections. The slower-income growth projections placed the regional cereals deficit at 47.5 million tons in the year 2000.

Wheat, which is primarily grown in winter in Arab countries, requires a period of cold to vernalize and an optimal amount of around 760 millimeters of rainfall during the growing season to produce a successful crop--two basic conditions that are lacking in the mostly semi-arid and arid climates which dominate the region. Climate, land and water constraints constitute inherent limitations to the agricultural development potential of the area and impede domestic food production.

Regional cooperation in production has proven to be a difficult endeavor due to the amount of financial and technical resources required and the relatively stagnant and inflexible nature of the agricultural sectors throughout the region to absorb new investments and employ them efficiently. The opportunity to collectively implement wheat procurement and storage policies is emerging as a feasible solution to securing demand requirements of the grain in the near-to-intermediate future. Such policies seem to be the only effective alternative to countering periodic shortfalls in production which is the most serious cause of food insecurity in the region. (Author's abstract from UMI Dissertation Abstracts)

Swaminathan, M.S.

1986 Sustainable Nutrition Security for Africa: Lessons from India. First Annual Arturo Tanco Memorial Lecture delivered on the occasion of the Twelfth Ministerial Session of the World Food Council, Rome, June 17, 1986. The Hunger Project Papers (5)

Today, Africa is in the spotlight in humankind's struggle against hunger. In the mid-1980s, sub-Saharan Africa was the

only major region of the world whose population growth rates were still increasing while per capita food production was declining.

Only 20 years ago, several food experts were predicting for many countries of Asia and Latin America a situation similar to that currently being witnessed in sub-Saharan Africa. India in particular was singled out as a hopeless case that could not be saved from hunger and famine. Today India has about 30 million tons of grain stocks, more than enough for maintaining a minimum food security reserve.

A sustainable nutrition security system for Africa can be devised. Such a system would contain all the components essential for giving every human being an opportunity to express his or her innate genetic potential. These components would include food, drinking water and minimum income security, nutrition intervention and education, and population stabilization.

The African version of the Indian green revolution can be built on the twin foundations of ecological and economic sustainability if African political and professional leaders use wisely the knowledge gained in the past 20 years in India and other Asian countries.

Essentially the message from the Indian experience is one of assigning the highest priority to agriculture. This includes developing a strong national research capability and methods of transferring know-how and skills to farmers; introducing agrarian reforms that can stimulate and sustain the growth of market-oriented farming; encouraging consumption by the rural and urban poor; and considering agriculture as a powerful instrument for increasing income and employment.

An action plan for Africa would consist of seven points-sustainable livelihood security for the poor; sustainable and equitable use of environmental systems; a symphonic agricultural system; science and technology; knowledge and skill sharing; resource mobilization and utilization; and political commitment and accountability.

To produce a sustainable agricultural production system in Africa will be no easy task. In agriculture, as in other areas of human endeavor, there are no miracles. Only hard and sustained work supported by selfless and visionary leadership will help to make the African agricultural opportunity a reality. (Author's summary)

Swift, J. and S.E. Purata

1988 Forestry and Food Security in the Pastoral Economies of Northern Tropical Africa. Background Paper for the Expert consultation on Forestry and Food Production/Security, Bangalore, India, 14-20 February 1988. Food and Agriculture Organization of the United Nations, Rome.

This paper describes and analyses the relationship between forestry and food security in the pastoral economies of northern tropical Africa. After a brief discussion of key environmental variables, we describe some pastoral economies, emphasising [sic] how pastoralists organise their economic life and manage resources. We then analyse more generally how African pastoral societies use forest resources as browse for their animals, and directly as food, fuel and construction materials. The paper concludes with a discussion of policy issues for the improvement of food security through forest management in pastoral systems in northern tropical Africa. (From author's introduction).

Torry, William I.

1987 Evolution of food rationing systems with reference to African group farms in the context of drought. In Drought and Hunger in Africa: Denying Famine a Future. Michael H. Glantz, ed., pp. 323-348. Cambridge University Press, Cambridge.

Emergency food rationing is an essential element of food systems in many societies and many researchers regard the disintegration of these systems as a factor in frequent famine occurrences in Africa. In a discussion and analysis of ethnographic data of the Hxaro system of gift exchange among the Kalahari !Kung San of northwest Botswana and the Jajmani system of South India, the author establishes that "stateless societies are not only unfit structurally for rationing food on a sustained basis, but actually defeat a basic emergency rationing goal," that of "forestalling famine at its terminal stages." Torry then looks at the emergency food rationing (EFR) systems of modern states and by contrasting them with 'primitive rationing' concludes that they offer advantages over traditional systems of emergency relief. In a final section the author considers the weaknesses and benefits of group farming/herding schemes in sub-Saharan countries in the context of drought and food emergencies, and the possibilities of integrating EFR measures with group farming systems to "combine short-term emergency assistance and long-term development planning."

Zinyama, L. M., D. J. Campbell, and T. Matiza

1987 Traditional Household Strategies to Cope with Food Insecurity in the SADCC Region. In Southern Africa: Food Security Policy Options. Mandivamba Rukuni and Richard H. Bernstein,

eds., pp. 183-205, University of Zimbabwe UZ/MSU Food Research in Southern Africa.

In a review of literature on coping strategies in the face of food shortages in rural Africa and an examination of available data on coping strategies in the SADCC countries, theoretical approaches to analysis of coping behaviour are compared, strategies are described and the structure of coping behavior is discussed. The authors first consider literature from the environmental, cultural ecological and political ecological approaches. They next examine coping strategies through literature on herding and farming communities in Sub-Saharan Africa and follow this with coping strategies in SADCC countries in which they discuss recent changes such as have appeared under the impact of colonialization and governmental intervention. The authors found that in Africa, long-standing local strategies are being replaced with redistribution strategies dependent on external institutions. Exogenous-based relief is less sensitive to local conditions and may fail to respond to local needs. It is also expensive compared to local strategies, which are essentially free. Because the reality in Africa is that open systems have replaced more closed systems, there is a need to balance local and external coping strategies for meeting food deficits.

GENERAL

Francis, Charles and Richard Harwood
1985 Enough Food: Achieving Food Security Through
Regenerative Agriculture Rodale Press, PA.

Food security must be achieved by the use of systems that use local, renewable resources and human creativity while combining successful farmer's practices with potentials discovered through science. Practices such as rotations with overseeded legumes, pest control through cultural patterns, more efficient use of major nutrients, integration of crops and livestock, and use of biological interactions between plants, animals and microbes are having a significant impact on agriculture both in the Third World and in more developed regions. Constraints to food security are: the instability of the international marketplace, increasing costs of energy, population pressures, and the instability of the biological environment. Long-term solutions depend on our understanding of biological realities and adapting tomorrow's technologies to these realities. Policies must reflect a priority for food security; and farming systems must depend largely on

renewable, internal resources. The paper ends with a checklist for measuring regenerative potential in a small trading area centered around weekly market activities.

Garine, I. and G. A. Harrison, eds.

1988 *Coping with Uncertainty in Food Supply.* Oxford University Press, New York.

"This volume is based on a conference held in Bad Homburg, Germany, 13-16 December, 1982 under the auspices of the Werner-Reimers-Stiftung, Bad Homburg, and the Maison des Sciences de l'Homme, Paris. It was organized by the German and French National Committees of the Regional Commission for Europe of the International Commission on the Anthropology of Food (ICAF) of the International Union of Anthropological and Ethnological Sciences." This conference, as well as an earlier one in October 1980, brought together cultural and biological anthropologists with an interest in nutritional ecology. Fluctuating food supplies and their relevance to malnutrition and underfeeding is the major focus of this issue, and these topics are addressed from either a biological anthropological or cultural anthropological approach. Participants were to address several questions which included (1) food resources of the people considered and fluctuations in their availability, (2) the relationships between fluctuations in food supply and natural environments and human economies, (3) biological and cultural characteristics that help people cope with uncertainties in their food supply, and (4) the effect of the increasing influence of advanced modern societies on traditional societies. The volume contains 20 contributions, beginning with two contributions on food supplies in non-human primates and followed by two papers on relevant biological aspects of human nutrition. The majority of the volume is composed of fifteen articles which deal with particular situations of uncertainty primarily with particular societies or peoples. Three articles deal with issues of change and contact in India. Food allocation is considered in the conclusion because this determines who actually experiences food shortage.

Hollist, W. Ladd and F. LaMond Tullis, eds.

1987 *Pursuing Food Security. Strategies and Obstacles in Africa, Asia, Latin America, and the Middle East.* Lynne Rienner Publishers, Boulder and London.

In a cross-hemispheric comparison of Latin America, Africa, and Asia, authors in this book examine the various internal and external factors which affect the developing nations' quest for food security. Two basic arguments are explored; first that the relation of less-developed countries with the international economy has constrained the capacities of these

countries to feed the rural and urban poor, and secondly, that the international economy has provided countries with opportunities to improve national food security. Regional specialization in appropriate technologies will best encourage basic food production and food security for developing countries, however, government policies which support social inequalities, encourage food grown for export, rely on food imports and capital-intensive and labor-displacing technologies are undermining food security. Part 1, World Food Security, contains two articles on world hunger and one paper on the opportunities in the International Economy for meeting the food requirements of the developing countries. Part 2, Africa's Food Crisis, contains articles on food security in Sub-Saharan Africa, external determinants of Africa's agrarian crisis and the economic crisis in Ethiopia. Part 3, Food and Agriculture in Asia, in three papers, looks at food security in South Asia, the dependent welfare state in Sri Lanka and the Chinese economy after Mao. Part 4, Agricultural Development and Hunger in Latin America, contains papers on Latin American Agriculture, the politics of hunger in Brazil and the conflict between cocaine and food production in Bolivia and Peru. The book concludes in Part 5 with a paper on food problems and state policies in the Middle East and North Africa.

Longhurst, Richard

1988 Cash Crops and Food Security. IDS Bulletin 19: n.p.

This article examines two main questions: what does the available evidence reveal about the impact on household food security and nutrition of a shift from semi-subsistence to cash cropping? Does this evidence, used together with present analytical frameworks, allow us to develop any predictive ability or typologies as to the impact on food consumption and nutrition of specific types of crops in different policy situations?

The article is divided into four sections. In the first, frames of analysis are discussed with some reference to economic theory that might be applied to the choice and impact of cash crops. This is followed by a review of data on the impact of cash crops on household food security and nutrition. These two sections are then used to propose predictive typologies or scenarios in the third section. Finally, a concluding section reviews the policy implications.

Longhurst, Richard and Michael Lipton

1989 The Role of Agricultural Research and Secondary Food Crops in Reducing Seasonal Food Insecurity. In Seasonal Variability in Third World Agriculture: The Consequences for Food Security. David E. Sahn, ed., pp. 285-297. Published for the International Food Policy Research Institute, The John Hopkins University Press. Baltimore and London.

In an exploration of data primarily from West Africa, this chapter explores the role of agricultural research and secondary food crops (SFCs) in reducing seasonal food insecurity. The authors examine three propositions about SFCs which if supported by evidence make a strong case for increasing food crop research on SFCs. These propositions are that SFCs are particularly significant (1) in poor households and vulnerable groups with those households (e.g., women and children), (2) in diets in ecologically marginal areas, and (3) during critical times either before the main food crop is harvested or after failure of the main staple crop. The authors begin with a definition of SFCs and then describe the role of secondary food crops in farmers' strategies to reduce fluctuations in the food supply. This is followed by a discussion of the current state of agricultural research on secondary crops, in particular the annual allocation of expenditures by Consultative Group on International Agricultural Research (CGIAR) centers funding and the food energy sources of various foods in developing countries. The authors conclude with a discussion of the preferred direction of research in reducing seasonal food insecurity, and the role that research should take with respect to secondary food crops.

Mellor, John W.

1988 Global food balances and food security. World Development. 16(9):997-1011.

The major structural imbalance in the current global food scene--surpluses in developed countries and deficits in developing countries--offers opportunity for substantial progress in assuring food security in both the long and the short run. To avail of this opportunity requires an understanding of the close connection between food supplies and purchasing power to purchase food.

Massive investment in rural infrastructure is a major component of long-term food security. Since infrastructure is efficiently produced by labor-intensive processes, food as a wage good is an important input, and the global economy would appear to be under-using it from an efficiency point of view. In the short run, food-for-work offers opportunity for immediate increase in food security, as do food subsidy programs. It is essential that a large complex of

institutions be developed if the current global scene is to result in increased food security. It will take time to develop those structures, even though food is available now. (Author's abstract)

Mellor, John W.

1987 Food Aid for Food Security and Economic Development. Poverty, Development and Food: Essays in honour of H. W. Singer on his 75th birthday. Edward Clay and John Shaw, eds, pp. 173-191. Macmillan Press.

Food aid plays an important role in the economies of the developing countries of the world. Total food aid to the developing countries currently amounts to about \$2.5 billion a year, and accounts for 9.4 per cent of all official development assistance.

The purpose of this paper is to examine food aid's contribution to the dual objectives of food security and economic growth in the developing world. It begins by reviewing the statistical record of food aid since the early 1960s. The paper then analyses the important contribution that food aid can make to food security, economic development, nutrition and employment in the low-income countries of the world. In these sections particular emphasis is placed on the role of food aid in Asia and Africa. The paper concludes that food aid can, and does, help provide the means needed to protect (and raise) the consumption status and labour productivity of the poor. (Author's abstract)

Wade, Isabel Mary

1986 Planning for Basic Food Needs in Third World Cities. Dissertation. Urban and Regional Planning. University of California, Berkeley.

Cities in developing countries share a specific problem in environmental planning: how can they plan to meet basic food and nutritional needs of their residents? The problem is of increasing concern to urban planners in developing countries because food security for poor cities cannot be achieved through world trade.

The question is examined within the conceptual framework of urban ecosystem theory, building upon the work of Richard Meier, Ken Newcombe, Stephen Boyde, Ian Burton and Anne Whyte. Productivity of urban systems can be enhanced through urban agriculture. Community-based production programs could provide the bulk of required nutrition, affordable perishable foods for poor urban residents. They also can improve the capacity of cities to resist food shortages.

The research method employed involved a careful review of urban agricultural programs in developed and developing countries. They were analyzed within the holistic ecosystem theoretical model. A process that can be used by community planners in designing and implementing urban agricultural strategies is proposed.

The principal technical considerations affecting the design of effective urban food production programs include: design options for small spaces, considerations for crop selection, year-round production strategies, and agricultural land-use planning. Ten case studies of food production programs in the cities of Manila (Philippines), Shanghai (China), Lae (Papua New Guinea), Kisangani (Zaire), Lusaka (Zambia), Panama City (Panama), Managua (Nicaragua), Hartford (USA), Maputo (Mozambique), and Singapore (Republic of Singapore) are analyzed throughout the study in light of their implications for policy makers. (Author's abstract from UMI Dissertation Abstracts)