

2) Restriction of access to child labor due to the Universal Primary Education scheme (dominant). Seclusion practiced under the dominant form implies the lack of an outlet for women's craft and food products. Women circumvent this restriction by depending upon children to sell their wares. Schildkrout's (1983) evidence illustrates the value of child labor; women who had children selling their prepared foods or crafts on the street full-time (talla) earned two to three times as much as women who had no children working for them. The recently promoted government policy of Universal Primary Education seriously threatens this source of economic livelihood because it removes children from the home during hours when they might otherwise be expected to help their mothers with sales.

3) Seasonal effects on productivity and long-term fertility (residual). Secluded women may experience the nutritional decline that often accompanies seasonal food shortages, and professional, "modern" women may be subject to seasonal inflation, but neither encounters the all-pervasive demands on labor experienced by Maguzawa and other nonsecluded rural women. Women practicing the residual form of gender relationship such as the Maguzawa are actively involved in all aspects of the agricultural cycle. Not only do they labor on family plots several days a week, but they also farm individual "private" plots, the proceeds of which are expected to support the entire household "well into the next rainy season" (Barkow, 1972, p. 325). These conditions imply vulnerability to seasonal diseases, as well as an increase in numbers of births and weaning activities at precisely the time when drought conditions might be expected to set in. The net effects include lower productivity on the part of the woman herself and an increased risk of infant mortality.

4) Lack of control of family labor product (residual). Whereas

secluded women earn income that is considered "inalienable," the product of rural women's farm labor is frequently controlled by the male family head. The significance of this fact emerges in the dry season, when men temporarily migrate in search of opportunities to earn cash via wage labor. It is at this time that they may choose to exercise the "ancient precautionary right . . . to close the gandu granary" (Hill, 1972, p. 50), leaving women and other dependents to fend for themselves (cf. Roberts, 1979).

5) Quota on girls entering secondary schools (emergent). Martin (1983) reports that only 15% of all secondary school positions are reserved for girl students. The lack of secondary education diminishes the likelihood of women being hired in many segments of the Nigerian economy.

6) Lack of job opportunity in the urban economy (emergent). Young Hausa women seeking a professional career are constrained by an increasingly trenchant pattern of sex-typing in the northern Nigerian work force, as well as limited job training opportunities. While they may be able to teach or do clerical work, virtually all other opportunities in business, agriculture, or government agencies are effectively closed to them.

7) Expansion of commodity markets (dominant). The availability of manufactured cloth and mechanically processed foods poses serious threats to women who are kept in seclusion. Blocked from engaging in most forms of wage labor and salaried work because of their spatial confinement, these women have few alternatives for earning an independent income.

Medium Effect

8) Inability to engage in secondary occupations (residual). Because residual women's labor is so completely absorbed by farm work, they have little time to devote to secondary occupations. One effect of this pattern of labor allocation--the lack of control over the family labor product--has

already been noted. A second is the inability of women to turn to occupational alternatives in the event of a drought. Although there is no absolute restriction on such a switch, the lack of market outlet, expertise, start-up capital, etc., may mitigate against success in such ventures, especially under the adverse economic conditions set in motion by drought.

9) Sexual harassment (emergent). The activities of women in households practicing the dominant and residual forms are either consistent with prevailing norms, or pose no threat to the established social order. Women who strike out on their own, however, whether as karuwai or bazawara, or simply in the pursuit of a job opportunity outside the home, are subject to strong verbal and occasional physical assault that may be explicitly sexual in nature (the distinction blurs between physical and sexual harassment in this context). This abuse is commonplace in work environments (cf. Remy-Weeks, 1973), and can take on increasingly threatening proportions during periods of economic or political instability (such as during a drought), when single women are forced into unwanted marriages or are driven out of town, because of the perception that they are connected to the moral laxity that supposedly precipitated the crisis.

Low Effect

10) Delayed childbearing (emergent). Well-educated women do not necessarily have fewer children than their more traditional peers, but they may delay their first child for as much as five years while they attend school (compensating later by ignoring the post-partum taboo, cf. Trevor, 1975a). Should they choose to engage in trading or other economic activities that depend on child labor in later life, this delayed access to a proven asset could leave them at a comparative disadvantage.

These observations demonstrate that it is possible to distinguish groups of women and their respective abilities to respond to drought on the basis of gender form. They also expose the difficulty in making any sort of quantitative comparison of the relative levels of gender vulnerability each group experiences. For example, while I may be able to demonstrate that secluded women's childbearing is threatened by early childbirth, and that the childbearing of farm women is affected by the greater risk of child mortality inherent in early weaning practices, I find it nonetheless difficult to derive any objective basis for concluding that one group is more vulnerable than the other as a consequence.

These difficulties notwithstanding, I would tentatively argue that the seclusion of women (i.e., the practice of the dominant form) in talakawa households carries with it the most negative set of implications for drought response. The spatial restrictions of purdah imply the inability to make any of several immediate responses to drought--engaging in wage labor, collecting food from uncultivated bush lands, collecting and selling firewood or fodder, etc. Beyond this, the long-term prospects for lower class households in which seclusion is practiced are not favorable, given the double onslaught of the Universal Primary Education scheme and competition from the industrial sector against secluded women's craft and food-processing occupations.

As for women in rural households practicing the residual form, they appear to be more completely exploited in the sense that they both provide subsistence and carry out the full complement of domestic duties. In terms of surviving drought conditions, however, the full utilization of family labor resources tends to confer benefits that outweigh individual costs. Although farm women do not control as much of the product of their labor as

secluded women might, their direct contributions to food production tend to stabilize the whole household unit, potentially improving their own lot in the process.

The vulnerability of women experiencing the emergent form does not appear to be as acute as either of the other groups. Their employment options are restricted somewhat by sexual bias, but their education levels make them attractive marriage matches, and it can be assumed that the jobs that do exist for them--as school teachers and secretaries--provide a fairly stable source of income.

TABLE 4

FACTORS AFFECTING THE VULNERABILITY OF WOMEN
EXPERIENCING DIFFERENT GENDER FORMS

High Effect

- Spatial restrictions on the expenditure of labor power (dominant)
- Restriction of access to child labor due to Universal Primary Education scheme (dominant)
- Seasonal effects on productivity and long-term fertility (residual)
- Lack of control of family labor product (residual)
- Quota on girls entering secondary school (emergent)
- Lack of job opportunity in the urban economy (emergent)

Medium Effect

- Inability to engage in secondary occupations (residual)
- Sexual harassment (emergent)
- Expansion of commodity markets (dominant)

Low Effect

- Delayed childbearing (emergent)

CONCLUSION

In this paper, I have defined the concept of gender vulnerability to drought to mean the inability to prepare, adjust, or adapt to drought due to constraints inherent in a particular form of gender relationship. I have also shown that the concept applies to men as well as women, and can be used to refer to different levels of social organization.

I have demonstrated gender vulnerability at the individual and household levels in comparisons of men and women, of women in different classes, and of women who experience different forms of gender relationship.

I conclude that women bear the brunt of the gender vulnerability in Hausaland. Major contributing factors to women's gender vulnerability include: 1) the unremunerative nature of women's work; 2) their lack of ownership and control of the means of production; 3) restrictions on women's education; 4) competitive disadvantage vis-a-vis new industrial commodities; 5) enhanced vulnerability to seasonal effects; and 6) spatial restrictions on their ability to sell their labor.

A second comparison above shows a marked increase in vulnerability among talakawa and working class women. Of greater interest than this simple outcome, perhaps, is the complex relationship that emerges between class and gender analytical categories. Generally speaking, the data show that talakawa women experience all of the negative aspects of any particular form of gender relationship, while enjoying few, if any, of the benefits.

Finally, I compared groups of talakawa women on the basis of the form of gender relationship they experience. The results of this investigation show that, while it was clearly possible to differentiate groups of women

on the basis of gender form, it is much more difficult to make any sort of quantitative comparison of the relative levels of drought vulnerability they experience. However, I tentatively conclude that seclusion poses the greatest risks to lower class women due to the effects of spatial restriction.

There can be little question proceeding from the foregoing that environmental relations are in all respects social relations, and more specifically, that gender constructions have clear environmental implications. This realization leads to the conclusion that a careful reconstruction of the process of gender transition and a thorough analysis of the resultant matrix of gender forms is essential to a complete understanding of the relationship of a particular society to its environment. The impetus derived from this contention points toward the redirection of hazards research and policy-making. This is especially critical insofar as the vulnerability of women to drought and other extreme geophysical conditions is directly tied to the well-being of all members of the societies to which they belong.

BIBLIOGRAPHY

- Apeldoorn, G. Jan van, ed.
 1981 Perspectives on Drought and Famine in Nigeria. London: Allen & Unwin.
- Barkow, Jerome H.
 1970 "Hausa and Maguzawa: Processes of Differentiation in a Rural Area of North Central State, Nigeria." Ph.D. dissertation. University of Chicago.
 1972 "Hausa Women and Islam." Canadian Journal of African Studies 6(2), pp. 317-328.
 1973 "Muslims and Maguzawa in North Central State, Nigeria: An Ethnographic Comparison." Canadian Journal of African Studies 7(1), pp. 59-76.
- Bennett, Jon
 1983 "Tigray: Famine and National Resistance." Review of African Political Economy 26 (July), pp. 94-102.
- Besmer, Fremont E.
 1977 "Initiation into the Bori Cult: A Case Study of Ningi Town." Africa 47(2), pp. 1-13.
- Burgess, Rod
 1978 "The Concept of Nature in Geography and Marxism." Antipode 10(2) (August), pp. 1-11.
- Caldwell, John C.
 1975 "Fertility Control." In Population Growth and Socioeconomic Change in West Africa, John C. Caldwell, ed. New York: Columbia University Press.
- Caldwell, John C., ed.
 1975 Population Growth and Socioeconomic Change in West Africa. New York: Columbia University Press.
- Chambers, Robert, Richard Longhurst, David Bradley and Richard Feachem
 1979 "Seasonal Dimensions to Rural Poverty: Analysis and Practical Implications." Brighton, U.K.: Institute for Development Studies.
- Cliffe, Lionel
 1974 "Capitalism or Feudalism? the Famine in Ethiopia." Review of African Political Economy 1, pp. 34-40.
- Cohen, Abner
 1969 Custom and Politics in Urban Africa: A Study of Hausa Migrants in Yoruba Towns. Berkeley: University of California Press.

- Coles, Catherine
1983 "Muslim Women in Town." Ph.D. dissertation. University of Wisconsin.
- Copans, Jean
1983 "The Sahelian Drought: Social Sciences and the Political Economy of Underdevelopment." In Interpretations of Calamity (from the Viewpoint of Human Ecology), Kenneth Hewitt, ed. Boston: Allen & Unwin.
- Cowan, Nicole A.
1984 "Women in Eritrea: An Eye-Witness Account." Review of African Political Economy 27/28, pp. 143-152.
- Dalby, David, R.J. Harrison Church, Fatima Bezzaz, eds.
1977 Drought in Africa. London: International African Institute.
- Eckhard, Nicole
1984 "Gender Relationships and Religion: Women in the Hausa Bori of Ader (Niger)." Paper presented at the African Studies Association Annual Meeting in Los Angeles.
- Franke, Richard and Barbara Chasin
1979 "Peanuts, Peasants, Profits and Pastoralists: The Social and Economic Background to Ecological Deterioration in Niger." Peasant Studies 8(3) (Summer), pp. 1-30.
- Harvey, David
1974 "Population, Resources, and the Ideology of Science." Economic Geography 50(3), pp. 256-277.
- Hewitt, Kenneth
1983a "The Idea of Calamity in a Technocratic Age." In Interpretations of Calamity (from the Viewpoint of Human Ecology), Kenneth Hewitt, ed. Boston: Allen & Unwin.
1983b Interpretations of Calamity (from the Viewpoint of Human Ecology). Boston: Allen & Unwin.
- Hill, Polly
1972 Rural Hausa: a Village and a Setting. New York: Cambridge University Press.
- Jackson, Sam
1978 "Hausa Women on Strike." Review of African Political Economy 13, pp. 8-20.
- Jiggins, Janice
1986 "Women and Seasonality: Coping with Crisis and Calamity." IDS Bulletin 17(3) (July), pp. 9-18.
- Kisekka, Mere N.
1980 "Marital and Familial Patterns in Zaria, Nigeria." Africana Marburgensia 13(2), pp. 42-50.

- 1981 Women and Development in Nigeria: A Bibliography. Bibliography Series No. 4. Addis Ababa: United Nations.
- Knowles, Carolyn
1985 "Women Under Development: Some Preliminary Remarks." In Women in Nigeria Today. London: Zed Books.
- Longhurst, Richard
1982 "Resource Allocation and the Sexual Division of Labor: A Case Study of a Moslem Hausa Village." In Women and Development: The Sexual Division of Labor in Rural Economies, Lourdes Beneria, ed. Geneva: ILO.
- Martin, Carol M.
1983 "Women Job Seekers--Unskilled Labor or Skill-building Alternatives: Case of Bauchi State, Nigeria." In Female and Male in West Africa, Christine Oppong, ed. Boston: Allen & Unwin.
- Meillassoux, Claude
1974 "Development or Exploitation: Is the Sahel Famine Good Business?" Review of African Political Economy 1, pp. 27-33.
- Onwuejeogwu, Michael
1969 "The Cult of the Bori Spirits among the Hausa." In Man in Africa, Mary Douglas and Phyllis M. Kaberry, eds. London: Tavistock Publications.
- Oppong, Christine, ed.
1983 Female and Male in West Africa. Boston: Allen & Unwin.
- Perchonock, Norma
1985 "Double Oppression: Women and Land Matters in Kaduna State." In Women in Nigeria Today. London: Zed Books.
- Pittin, Renee I.
1979 "Marriage and Alternative Strategies: Career Patterns of Hausa Women in Katsina City." Ph.D. dissertation. University of London.

1983 "Houses of Women: A Focus on Alternative Life-styles in Katsina City." In Female and Male in West Africa, Christine Oppong, ed. Boston: Allen & Unwin.
- Redda, Arya
1984 "The Famine in Northern Ethiopia." Review of African Political Economy 27/28, pp. 157-164.
- Remy-Weeks, Dorothy Caroline
1973 "Adaptive Strategies of Men and Women in Zaria, Nigeria: Industrial Workers and Their Wives." Ph.D dissertation. University of Michigan.

- Reuke, Ludger
 1969 Die Maguzawa in Nordnigeria. Freiburg: Bertelsmann Universitäts-verlag.
- Roberts, Pepe
 1979 "'The Integration of Women into the Development Process': Some Conceptual Problems." IDS Bulletin 10(3), pp. 60-66.
 1981 "'Rural Development' and the Rural Economy in Niger, 1900-1975." In Rural Development in Tropical Africa, Judith Heyer, Pepe Roberts, and Gavin Williams, eds. New York: St. Martins.
- Schildkrout, Enid
 1983 "Dependence and Autonomy: The Economic Activities of Secluded Hausa Women in Kano." In Female and Male in West Africa, Christine Oppong, ed. Boston: Allen & Unwin.
 1978 "Roles of Children in Urban Kano." In Sex and Age as Principles of Social Differentiation, Jean La Fontaine, ed. London: Academic Press.
- Schmidt, Alfred
 1971 The Concept of Nature in Marx. London: New Left Books.
- Schroeder, Richard A
 1985 "Gender Vulnerability to Drought: A Case Study of the Hausa Social Environment." M.S. Thesis. University of Wisconsin-Madison.
- Shenton, Bob and Bill Freund
 1978 "The Incorporation of Northern Nigeria into the World Capitalist Economy." Review of African Political Economy 13, pp. 8-20.
- Shenton, Bob and Mike Watts
 1979 "Capitalism and Hunger in Northern Nigeria." Review of African Political Economy 15/16, pp. 53-62.
- Shenton, Robert and Louise Lennihan
 1981 "Capital and Class: Peasant Differentiation in Northern Nigeria." Journal of Peasant Studies 9(1), pp. 47-70.
- Simmons, Emmy B.
 1975 "The Small Scale Rural Food-processing Industry in Northern Nigeria." Food Research Institute Studies 14(2), pp. 147-161.
 1976 "Economic Research on Women in Rural Development in Northern Nigeria." OLC Paper No. 10. Washington, D.C.: American Council on Education.
- Smith, Mary F.
 1981 Baba of Karo: a Woman of the Muslim Hausa (1954). New Haven: Yale University Press.

- Smith, Michael G.
 1966 "Hausa Inheritance and Succession." In Studies in the Laws of Succession in Nigeria, John D.M. Derrett, ed. London: Oxford University Press.
- 1981 Introduction to Baba of Karo: A Woman of the Muslim Hausa, by Mary F. Smith (1954). New Haven: Yale University Press.
- Smith, Neil
 1979 "Geography, Science and Post-Positivist Modes of Explanation." Progress in Human Geography 3(3) pp. 356-383.
- Smith, Neil and Phil O'Keefe
 1980 "Geography, Marx and the Concept of Nature." Antipode 12(2), pp. 30-39.
- Susman, Paul, Phil O'Keefe, and Ben Wisner
 1983 "Global Disasters, a Radical Interpretation." In Interpretations of Calamity (from the Viewpoint of Human Ecology), Kenneth Hewitt, ed. Boston: Allen & Unwin.
- Swift, Jeremy
 1977 "Desertification and Man in the Sahel." In Land Use and Development, Phil O'Keefe and Ben Wisner, eds. London: International African Institute.
- Trevitt, Lorna
 1973 "Attitudes and Customs in Childbirth amongst Hausa Women in Zaria City." Savanna 2(2), pp. 223-336.
- Trevor, Jean
 1975a "Family Change in Sokoto, a Traditional Muslim Fulani/Hausa City." In Population Growth and Socioeconomic Change in West Africa, John C. Caldwell, ed. New York: Columbia University Press.
- 1975b "Western Education and Muslim Fulani Hausa Women in Sokoto, Northern Nigeria." In Conflict and Harmony in Education in Tropical Africa, Godfrey N. Brown and Mervyn Hiskett, eds. London: Allen & Unwin.
- Wallace, Tina
 1978 "The Concept of Gandu: How Useful Is It in Understanding Labour Relations in Rural Hausa Society?" Savanna 7(2), pp. 137-150.
- 1979 Rural Development Through Irrigation: Studies in a Town on the Kano River Project. Zaria, Nigeria: CSER.
- Ware, Helen
 1983 "Female and Male Life-Cycles." In Female and Male in West Africa, Christine Oppong, ed. Boston: Allen & Unwin.

Watts, Michael J.

- 1983a "Hazards and Crises: A Political Economy of Drought and Famine in Northern Nigeria." Antipode 15(1), pp. 24-34.
- 1983b "On the Poverty of Theory: Natural Hazards Research in Context." In Interpretations of Calamity (from the Viewpoint of Human Ecology), Kenneth Hewitt, ed. Boston: Allen & Unwin.
- 1983c Silent Violence: Food, Famine and Peasantry in Northern Nigeria. Berkeley: University of California Press.

White, Gilbert F., ed.

- 1974 Natural Hazards: Local, National, Global. New York: Oxford University Press.

Williams, Raymond

- 1973 "Base and Superstructure in Marxist Cultural Theory." New Left Review (November-December), pp. 3-17.

Wisner, Ben

- 1976 "Man-made Famine in Eastern Kenya: The Interrelationship of Environment and Development." Sussex, U.K.: Institute for Development Studies.
- 1978 "Does Radical Geography Lack an Approach to Environmental Relations?" Antipode 10 (March), pp. 84-95.

Women in Nigeria Today

- 1985 London: Zed Books.

NATURAL HAZARD RESEARCH WORKING PAPER SERIES
Institute of Behavioral Science #6, Campus Box 482
University of Colorado, Boulder, Colorado 80309

The Natural Hazard Research Working Papers series is a timely method to present research in progress in the field of human adjustments to natural hazards. It is intended that these papers be used as working documents by the group of scholars directly involved in hazard research, and as information papers by a larger circle of interested persons.

Single copies of working papers cost \$4.50 per copy. It is also possible to subscribe to the working paper series; subscription entitles the subscriber to receive each new working paper as it comes off the press at the special discount rate of \$3.00 per copy. When a new working paper is sent to a subscriber it is accompanied by a bill for that volume.

- 1 The Human Ecology of Extreme Geophysical Events, Ian Burton, Robert W. Kates, and Gilbert F. White, 1968, 37 pp.
- 2 Annotated Bibliography on Snow and Ice Problems, E. C. Relph and S. B. Goodwillie, 1968, 16 pp.
- 3 Water Quality and the Hazard to Health: Plicarding Public Beaches, J. M. Hewings, 1968, 74 pp.
- 4 A Selected Bibliography of Coastal Erosion, Protection and Related Human Activity in North America and the British Isles, J. K. Mitchell, 1968, 70 pp.
- 5 Differential Response to Stress in Natural and Social Environments: An Application of a Modified Rosenzweig Picture-Frustration Test, Mary Barker and Ian Burton, 1969, 22 pp.
- 6 Avoidance-Response to the Risk Environment, Stephen Golant and Ian Burton, 1969, 33 pp.
- 7 The Meaning of a Hazard--Application of the Semantic Differential, Stephen Golant and Ian Burton, 1969, 40 pp.
- 8 Probabilistic Approaches to Discrete Natural Events: A Review and Theoretical Discussion, Kenneth Hewitt, 1969, 40 pp.
- 9 Human Behavior Before the Disaster: A Selected Annotated Bibliography, Stephen Golant, 1969, 16 pp.
- 10 Losses from Natural Hazards, Clifford S. Russell, (reprinted in Land Economics), 1969, 27 pp.
- 11 A Pilot Survey of Global Natural Disasters of the Past Twenty Years, Research carried out and maps compiled by Lesley Sheehan, Paper prepared by Kenneth Hewitt, 1969, 18 pp.

- 12 Technical Services for the Urban Floodplain Property Manager: Organization of the Design Problem, Kenneth Cypra and George Peterson, 1969, 25 pp.
- 13 Perception and Awareness of Air Pollution in Toronto, Andris Auliciems and Ian Burton, 1970, 33 pp.
- 14 Natural Hazard in Human Ecological Perspective: Hypotheses and Models, Robert W. Kates (reprinted in Economic Geography, July 1971), 1970, 33 pp.
- 15 Some Theoretical Aspects of Attitudes and Perception, Myra Schiff (reprinted in Perceptions and Attitudes in Resources Management, W. R. D. Sewell and Ian Burton, eds.), 1970, 22 pp.
- 16 Suggestions for Comparative Field Observations on Natural Hazards, Revised Edition, October 20, 1970, 31 pp.
- 17 Economic Analysis of Natural Hazards: A Preliminary Study of Adjustment to Earthquakes and Their Costs, Tapan Mukerjee, 1971, 37 pp.
- 18 Human Adjustment to Cyclone Hazards: A Case Study of Char Jabbar, M. Aminul Islam, 1971, 60 pp.
- 19 Human Adjustment to Agricultural Drought in Tanzania: Pilot Investigations, L. Berry, T. Hankins, R. W. Kates, L. Maki, and P. Porter, 1971, 69 pp.
- 20 The New Zealand Earthquake and War Damage Commission--A Study of a National Natural Hazard Insurance Scheme, Timothy O'Riordan, 1971, 44 pp.
- 21 Notes on Insurance Against Loss from Natural Hazards, Christopher K. Vaughan, 1971, 51 pp.
- 22 Annotated Bibliography on Natural Hazards, Anita Cochran, 1972, 90 pp.
- 23 Human Impact of the Managua Earthquake Disaster, R. W. Kates, J. E. Haas, D. J. Amaral, R. A. Olson, R. Ramos, and R. Olson, 1973, 51 pp.
- 24 Drought Compensation Payments in Israel, Dan Yarden, 1973, 25 pp.
- 25 Social Science Perspectives on the Coming San Francisco Earthquake--Economic Impact, Prediction, and Construction, H. Cochrane, J. E. Haas, M. Bowden and R. Kates, 1974, 81 pp.
- 26 Global Trends in Natural Disasters, 1947-1973, Judith Dworkin, 1974, 16 pp.
- 27 The Consequences of Large-Scale Evacuation Following Disaster: The Darwin, Australia Cyclone Disaster of December 25, 1974, J. E. Haas, H. C. Cochrane, and D. G. Eddy, 1976, 67 pp.

- 28 Toward an Evaluation of Policy Alternatives Governing Hazard-Zone Land Uses, E. J. Baker, 1976, 73 pp.
- 29 Flood Insurance and Community Planning, N. Baumann and R. Emmer, 1976, 83 pp.
- 30 An Overview of Drought in Kenya: Natural Hazards Research Paradigm, B. Wisner, 1976, 74 pp.
- 31 Warning for Flash Floods in Boulder, Colorado, Thomas E. Downing, 1977, 80 pp.
- 32 What People Did During the Big Thompson Flood, Eve C. Gruntfest, 1977, 62 pp.
- 33 Natural Hazard Response and Planning in Tropical Queensland, John Oliver, 1978, 63 pp.
- 34 Human Response to Hurricanes in Texas--Two Studies, Sally Davenport, 1978, 55 pp.
- 35 Hazard Mitigation Behavior of Urban Flood Plain Residents, Marvin Waterstone, 1978, 60 pp.
- 36 Locus of Control, Repression-Sensitization and Perception of Earthquake Hazard, Paul Simpson-Housley, 1978, 45 pp.
- 37 Vulnerability to a Natural Hazard: Geomorphic, Technological, and Social Change at Chiswell, Dorset, James Lewis, 1979, 39 pp.
- 38 Archeological Studies of Disaster: Their Range and Value, Payson D. Sheets, 1980, 35 pp.
- 39 Effects of a Natural Disaster on Local Mortgage Markets: The Pearl River Flood in Jackson, Mississippi - April 1979, Dan R. Anderson and Maurice Weinrobe, 1980, 48 pp.
- 40 Our Usual Landslide: Ubiquitous Hazard and Socioeconomic Causes of Natural Disaster in Indonesia, Susan E. Jeffery, 1981, 63 pp.
- 41 Mass Media Operations in a Quick-onset Natural Disaster: Hurricane David in Dominica, Everett Rogers and Rahul Sood, 1981, 55 pp.
- 42 Notices, Watches, and Warnings: An Appraisal of the USGS's Warning System with a Case Study from Kodiak, Alaska, Thomas F. Saarinen and Harold J. McPherson, 1981, 90 pp.
- 43 Emergency Response to Mount St. Helens' Eruption: March 20-April 10, 1980. J. H. Sorensen, 1981, 70 pp.
- 44 Agroclimatic Hazard Perception, Prediction and Risk-Avoidance Strategies in Lesotho. Gene C. Wilken, 1982, 76 pp.

- 45 Trends and Developments in Global Natural Disasters, 1947 to 1981, Stephen A. Thompson, 1982, 30 pp.
- 46 Emergency Planning Implications of Local Governments' Responses to Mount St. Helens, Jack D. Kartez, 1982, 29 pp.
- 47 Disseminating Disaster-Related Information to Public and Private Users, Claire B. Rubin, 1982, 32 pp.
- 48 The Nino as a Natural Hazard; Its Role in the Development of Cultural Complexity on the Peruvian Coast, Joseph J. Lischka, 1983, 69 pp.
- 49 A Political Economy Approach to Hazards: A Case Study of California Lenders and the Earthquake Threat, Sallie Marston, 1984, 35 pp.
- 50 Restoration and Recovery Following the Coalinga Earthquake of May, 1983, Steven P. French, Craig A. Ewing, and Mark S. Isaacson, 1984, 30 pp.
- 51 Emergency Planning: The Case of the Diablo Canyon Power Plant, June Belletto De Pujo, 1985, 63 pp.
- 52 The Effects of Flood Hazard Information Disclosure by Realtors: the Case of the Lower Florida Keys, John Cross, 1985, 85 pp.
- 53 Local Reaction to Acquisition: An Australian Study, John W. Handmer, 1985, 96 pp.
- 54 The Environmental Hazards of Colorado Springs, Eve Gruntfest and Thomas Huber, 1985, 62 pp.
- 55 Disaster Preparedness and the 1984 Earthquakes in Central Italy, David Alexander, 1986, 98 pp.
- 56 The Role of the Black Media in Disaster Reporting to the Black Community, Charles H. Beady, Jr. and Robert C. Bolin, 1986, 87 pp.
- 57 The 1982 Urban Landslide Disaster at Ancona, Italy, David Alexander, 1986, 63 pp.