The President's World University Series

Women in International Development

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Editor's Note:

On March 18, 1982, a special feature presentation was presented on Women in International Development at the annual meeting of the Southwestern Social Science Association in San Antonio, Texas. This special feature presentation on Women in International Development reflects the fact that women in development is a critical research concern shared by several disciplines. These presentations by investigators from a wide range of international experiences and backgrounds provide an opportunity to examine alternative research structures and to consider how varied research approaches can best be integrated.

Pamela Swan Horne
International Coordinator
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Women in International Development

I'm Pamela Horne and I am the Title XII Strengthening Grant Administrator and Women in Development Coordinator at Texas A&M University.

I would first like to say that it is a delight to be here and it is a pleasure for me to see faculty from a wide range of disciplines interested in issues related to women in international development.

The general purpose of this session today is two-fold:

first: to provide a general orientation to women in development issues; and

secondly: to discuss how WID concerns can and have been addressed through university research and program efforts.

Each of our guest speakers will address these issues—bringing with them their own unique international experiences and scholarly work in their respective disciplines.

Dr. Susan Tiano is assistant professor in sociology at the University of New Mexico. Prior to her recent move to the Southwest, Dr. Tiano was the Women in Development Director and assistant professor in the department of social science at Michigan State University. Through her efforts, Michigan State University recently acquired a $100,000 grant from the Ford Foundation to develop a project to train future international women leaders for WID-sensitive projects and planning. One of her main research interests is to develop a theoretical framework to guide research in Women in Development.

Dr. Alex McIntosh is associate professor of sociology at Texas A&M University. Dr. McIntosh has lived in Laos for four years as a volunteer for International Voluntary Services, Inc. and has visited and studied many other Southeast and South Asian countries. His noted research and experience well reflects his primary interest in social change, with an emphasis in both the theoretical and applied aspects of changing societies--particularly with respect to rural communities and to less developed nations.

Dr. Mary Fish is professor of economics at the University of Alabama. Dr. Fish has served as a consultant to the Gambian Government and World Bank and was a Fulbright lecturer in the College of Business and Public Administration at the Universty of Liberia as well as editor for the *Liberian Economic and Management Review*. Her research efforts cover a wide area of interests—including her noted publications on the Liberian economy, Zambia's copper industry, and the determinants of fertility—a theoretical forecasting model.

Dr. Clarissa Kimber is professor of geography at Texas A&M University. Dr. Kimber has conducted research in plant geography, proto and early agriculture as well as geography of the Caribbean tropics. Her international work includes studies of the historical plant geography of Martinique, vegetation surveys of Dominica and studies in dooryard gardens in Puerto Rico. She has been responsible for developing and teaching courses in the cultural geography of the Caribbean, the tropical world and Latin America.

Dr. Marietta Morrissey is an associate professor in the department of sociology at Texas Tech University. She is currently pursuing research in development in the Caribbean, with emphasis on food production and marketing. She is also at work on a book that compares histories of labor force participation in Cuba and Jamaica. She teaches in the Women's Studies Program and is active in the Women in Development group at Texas Tech.

As is evident by this very brief synopsis of these individuals, women in development covers a wide range of academic disciplines and backgrounds. But, before we begin with individual presentations, I think it might be helpful to provide an overview of Title XII and one of its major program components, the Strengthening Grant Program. This piece of legislation has helped to make this type of session possible.

Briefly, Title XII is the 1975 amendment to the Foreign Assistance Act of 1961. This amendment is entitled *Famine Prevention and Freedom from Hunger* and its primary focus is well established in its ambitious title: to prevent famine and free the world from hunger.

Why is this a concern? Because right now there are one half billion people in the world who are malnourished. About 1 billion, 300 million people in the world are chronically undernourished. Over one half of the malnourished, more people than the entire U.S. population, are children under 5. And there is every indication that this situation is not going to get any better—despite signs of increasing food production.

Through this amendment, Title XII, the Agency for International Development (A.I.D.) is requested to make greater use of the resources available in U.S. universities, particularly the land grant universities. The general purpose is to increase institutional capability in research, education and extension in developing countries—on all levels of agriculture and rural development.

While Title XII appears to be a straightforward amendment in linking universities to AID in addressing world food and hunger problems—there are a number of critical issues that arise from this amendment. Two issues or questions that immediately arise are: How do you get faculty involved and

interested in utilizing their expertise to address world food and hunger problems? And secondly, once involvement and interest occurs, how do you prepare them to be effective in specific international development work? These are two primary questions that evolved out of the Title XII amendment and are being addressed, in part, through Title XII Strengthening Grants.

The Title XII Strengthening Grant is a small program component that has been authorized by the Title XII amendment. Its major focus is to assist the university community in "gearing up" for international development work.

While AID seeks to encourage each institution to design its own proposed program, illustrations of strengthening efforts can be seen in universities' development of language training programs for faculty, scholarly exchanges and posts for visiting specialists, and establishment of core support and professional backstopping of overseas projects. These types of activities attempt to realize the general purpose of the Title XII Strengthening Grant which according to the 1978 *AID Title XII Handbook* is to "facilitate, stimulate, increase and orient the capacity and commitment of each participating university to the implementation, under other funding arrangements, of development assistance programs identified in the legislation."

It is not enough, for example, to send leading U.S. scientists in agriculture to solve food production problems in Africa. Why? Because solutions that work in the U.S. do not and most likely cannot work in a developing country. Production is not an isolated event anywhere—but far less so in a developing country where farmers operate on a subsistence level, where there are problems of acquiring credit, where there is increasing population, and where traditional methods reign because few can afford to take the chance of experimenting with a crop that keeps them alive.

So while legislative efforts to utilize university expertise in assisting a country in developing its own expertise are necessary and long overdue, we need to encourage and help prepare our university faculty and students so that we are able to address the problems of hunger and starvation with realism and understanding. We need to know and respect the cultural, social and technical differences. International development is a complex problem. And to address poverty and starvation we need to prepare our universities to recognize this complexity and to be able to effectively work within a myriad of circumstances.

Hopefully, through the Strengthening Grants and other program components authorized by Title XII, there are mechanisms whereby we can involve and train faculty and students for effective international development work.

But what is this Women in Development? How do women fit into all of this? Well, we are beginning to find out that women have a very significant role in production and that role has been long overlooked when addressing world food and hunger problems. Recent studies of the role of women in agriculture in developing countries indicate that women are responsible for as much as 60-70% of the farming and that it is estimated that on a world wide basis, 40% of the food supply is contributed by women. In recognition of such

information, program planners are beginning to identify problems that have resulted from not accounting for women's role in production. For example, one problem that has deterred effective program implementation is that the people providing the assistance are often providing the agricultural information primarily to men, and these men may not necessarily be doing the farming or harvesting the crops or taking the produce to market.

WID, or Women in Development, is generally recognized as a focus on the status of women in developing countries and the role they play in the development process. This focus generally encompasses research and teaching as well as programmatic efforts to involve women in the planning and implementation of specific development projects. "WID" is a word that paraphrases the need for women to be integrated both as agents of development and as beneficiaries in the development process. As I hope you will recognize today by our panelists, research and issues concerning women in international development is not an isolated effort nor can be treated as a separate study or discipline. For the issues concerning women in international development concern an assembly of disciplines—each of which is vital to the understanding of how our world works and can survive.

Women and Work in Northern Mexican Cities: Some Considerations Relevant to Research

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The emerging field of women in international development has served a valuable function by directing the attention of scholars and policy makers to the situation of women and families in the Third World. It has generated a body of research which, by challenging many cherished assumptions of the 1960's U.S. development policy, has led to a more realistic appraisal of the costs as well as the advantages of planned development. To date, its most salient contributions, in my opinion, have focused upon women in rural areas. Even a cursory reading of the literature familiarizes one with certain well-established principles concerning the situation of rural women: that women play an important and varied role in traditional agricultural production; that these roles tend to erode with the introduction of market systems and modern technologies; that family nutritional levels are related to women's access to land and productive resources; and so forth. Much less frequently encountered are parallel generalizations about the economic and social roles of city women.

In part this rural focus reflects the emphases of the governmental and private organizations which fund women in development related research and networking. The Agency for International Development's decade-long commitment to helping the "poorest of the rural poor" has led to an almost exclusive concern with rural development. A basic thrust of this emphasis is the Title XII Program, which aims to eliminate hunger and malnutrition by improving developing nations' agricultural production capacities. Like most other U.S. development assistance programs, Title XII has tended to em-

phasize aggregate production and to pay relatively little attention to resource distribution. Further, while Title XII is responsible for much of the current interest in women in development, its primary emphasis on rural women—especially their roles as food producers and processors—has deflected attention away from other equally pressing research foci.

I cannot help but agree with an argument advanced by Francis Moore Lappé and Joseph Collins in *Food First* (1977): the basic cause of world hunger and malnutrition is not inadequate agricultural productivity or traditional people's ignorance of nutrition. Rather, in today's market-oriented world where food, like other commodities, is sold to those consumers who are best able to pay its price, the main cause of hunger is the inegalitarian distribution of resources that dooms many to poverty. Even in nations which are net exporters of foodstuffs, people go hungry because they lack the necessary resouces to produce or to purchase food. People are most likely to be well-nourished when they have control of a parcel of land of sufficient size to grow much of their own food, or when they earn an ample, stable wage with which to buy agricultural commodities. Title XII-oriented programs should thus be equally or more concerned with questions of resource distribution in urban as well as rural areas, as with agricultural productivity in the countryside. Further, since women generally bear primary responsibility for feeding themselves and their families, their access to and control over income-generating resources should be a central focus for Title XII-related research and development projects.

The over-emphasis on the rural sector is also inconsistent with today's unprecedented rates of worldwide urbanization. In many developing nations, rapid rural-to-urban migration is leading to the dramatic growth of urban populations. A massive influx of people from the countryside frequently strains a city's ability to provide adequate jobs, housing, and services to its residents. While there is some evidence suggesting that women are particularly likely to bear the disadvantages of urban over-crowding (Papanek 1976; Youssef 1976), to date few studies have comprehensively documented the problems and survival strategies of urban women. The exceptions to this tendency tend to come from Third World scholars (Jelin 1979; Arizpe 1977) rather than U.S. researchers.

With these considerations in mind, the following discussion centers upon the economic roles and activities of women in developing societies. I will briefly outline two perspectives on women's labor force participation and its links to socioeconomic development—modernization theory and Marxist-feminist theory. I will then suggest how these perspectives can be used to generate testable hypotheses about women's work in one rapidly-developing context, the border region of northern Mexico. I will indirectly address the Title XII issue of adequate nutrition for women and families by concentrating on a prior step in the food consumption process: women's ability to procure a stable income or other resources with which to purchase food and other necessary commodities. Such an analysis will be applicable to women in both

urban and rural communities.

Overview: Two Theoretical Perspectives on Women's Remunerated Work

Although women comprise fifty percent of the world's adult population and represent one third of its official labor force, they perform almost two thirds of all working hours yet receive only one tenth of the total world income (United Nations 1980, p.7). The substantial majority of the female wage earners are employed in a limited number of occupations entailing low levels of skill, responsibility, and remuneration (United Nations 1976, p. 18). Throughout the world, women's rates of unemployment and underemployment tend to be substantially higher than those for their male counterparts in the same social class (ICRW 1980, pp. 63-65). This situation is especially likely to entail hardships for women in Third World nations, where overpopulation, inflation, and poverty are widespread.

Within this problematic economic context, those factors which influence women's need for and ability to secure and maintain adequately-remunerated work outside the home assume paramount importance. Whether and how these factors are affected by socioeconomic development are similarly salient theoretical and empirical questions. Modernization theory tends to explain women's relatively limited labor force participation in terms of conditions which restrict the supply of women qualified to fill the occupational roles most needed by their societies (ICRW 1980a, p. 26). Among those are inadequate education and training, conflicting familial and child care responsibilities, and sex-role socialization defining women's primary roles as wives and mothers. Marxist-feminist theory, by contrast, tends to stress factors such as rigidly sex-segregated labor markets, overly rapid population growth, and a scarcity of stable, adequately-remunerated jobs, which limit the demand for women in the labor force.

Modernization Theory

Although modernization theorists rarely focus primarily on women, most would agree that modernization improves the status and increases the well-being of women over that obtaining in nonmodern societies (Lewis 1962, p. 12; Moore 1965, p. 89; Smelser 1970, p. 37). Life in "traditional" societies is assumed to constrain women's autonomy and options by excluding them from positions of power and influence and by subordinating them to male authority figures within the family and the village (Lerner 1958, p. 99). The rigid sex-based division of labor and the emphasis on ascription as a determinant of social status presumably prevent women from freely choosing their economic roles and activities (Hoselitz 1970, pp. 18-19). Traditional customs and laws which exclude women from ownership and control of property are assumed to limit their access to the means of production and to minimize their control over the fruits of their labor. Further, the low level of technological sophistication dooms women, whose work in the fields and in the household contributes substantially to their family's subsistence, to a lifetime of drudgery.

Proponents of modernization theory would agree that socioeconomic development improves women's status and well-being. With the separation of the family from the context of socially-valued production, the modern wife presumably acquires her own sphere, the household, over which she has considerably autonomy and decision-making control vis-a-vis her husband (Smelser 1970, p. 37; Parsons 1954, p. 95). Yet although the household comes to be defined as women's primary sphere, this development does not, according to modernization theory, substantially limit women's opportunities for employment outside the home. To the contrary, a number of changes associated with socioeconomic development are assumed to expand women's range of options for labor force participation (see Little 1976, p. 79). The proliferation of specialized occupations in the secondary and tertiary sectors of the modernizing economy presumably expands the range of employment opportunities for women as well as men (Smelser 1970, p. 36; Hoselitz 1970, p. 19). Socioeconomic development also supposedly transforms the stratification system from a rigid, bifurcated "caste" system permitting little mobility between status positions, into a fluid, multi-strata "class" system that allows frequent upward and downward movement among strata (Moore 1965, p. 94; Smelser 1970, p. 40). Men's and women's statuses and roles cease being ascribed to them on the basis of innate characteristics and become instead the results of personal achievements (Eisenstadt 1966, p. 38; Smelser 1970, p. 40; Tumin 1969, pp. 225-229). As skill, interest, and training replace gender as the major determinants of social roles and statuses (Eisenstadt 1966, p. 38), women presumably gain access to a variety of economic roles outside the home (Moore 1965, p. 89). Too, modern norms emphasizing individual achievement are expected to free women to improve their status through hard work, educational attainment, or wise investment.

According to modernization theory, once a society has achieved a certain level of socioeconomic development, women's relatively low rates of labor force participation and their predominance in certain occupations are not due primarily to a shortage of employment opportunities. Instead they are generally attributed to factors that limit the supply of qualified women in the labor force (Hoselitz 1970, p. 170; Anderson 1970, pp. 264-266; Moore 1970, p. 319-320). Because women tend to view the household as their primary domain of responsibility, they often choose not to enter or leave the workforce in order to concentrate their time and energy on childcare and homemaking activities (Parsons 1954, p. 94). Also, since economic growth presumably leads to an increasingly affluent society, the wages or salary of the primary breadwinner are often sufficient for family maintenance (Goode 1970, p. 242).

The underrepresentation of women in better-paid, more prestigious professional and skilled occupations is assumed to reflect a shortage of qualified, interested women (see ICRW 1980, p. 2). Urban labor markets presumably afford men and women equal opportunity to compete for jobs, which are allocated on the basis of personal qualifications and skills (see Sokoloff 1978,

p. 5). However, since women's socialization tends to emphasize marital and familial, as opposed to occupational roles, many women do not internalize achievement-oriented values, develop aspirations for professional careers, or avail themselves of educational or training opportunities that could prepare them for top-level jobs. Further, because most women are assumed to participate in the labor force as secondary wage earners whose primary obligations are to their homes and families, they tend to enter and to leave their jobs as familial and child-rearing responsibilities dictate. This presumably makes it difficult for women to acquire the seniority, experience, and competence necessary for promotions and salary increases, and makes employers reluctant to hire women for responsible positions. Thus, although socioeconomic development is expected to expand the range of employment options for women, many have neither the qualifications nor the desire to take advantage of these opportunities.

An alternative explanation of women's employment patterns might question whether a society can consistently provide enough jobs to meet men's and women's needs for stable employment. If prevailing economic conditions fail to supply sufficient occupational opportunities, even highly qualified and motivated workers will experience unemployment and underemployment.

Marxist Feminist Theory

Proponents of Marxist feminist theory maintain that the status of women has deteriorated with the spread of a market-based, capitalist economy. In pre-class societies, in which women presumably shared with men the responsibility for transforming collectively owned resources into socially useful goods and services, women were fairly independent economically and made many of their own decisions. The development of class society, two cornerstones of which are private property and the monogamous family, is assumed to have increased women's subjugation by men (Engels 1975, p. 137; Leacock 1975, p. 41). The nuclear family, which controlled a woman's biological reproduction in order to ensure her childrens' "legitimacy," allowed for the stable transmission of wealth to subsequent elite generations. Yet as capitalism created a division between the "private" context of the family and the "public" context of the workplace, confining socially-valued production to the latter sphere, women's originally socially necessary labor was transformed into a private service for her husband (Benston 1969, p. 15; Eisenstein 1979, p. 30). Men became laborers, producing surplus value for which they were paid wages that supported themselves and their families. Women became consumption workers, exchanging their husband's income at the marketplace for commodities upon which their family subsisted. (Weinbaum Batya and Bridges 1979, p. 193). A woman's isolation within the family and concomitant separation from the contexts of socially valued production made her economically dependent on her husband and gave her little material basis for authority within the family (Smith 1975, p. 71; de Miranda 1977, p. 262).

Although the sexual division of labor that reflects the public-private dichotomy does not, the argument continues, prevent women from entering paid employment, it severely limits the conditions under which women participate in the labor force. The segregation of labor markets according to culturally-determined definitions of "men's" and "women's" jobs restricts women's access to better-paying, high status occupations (de Miranda 1977, p. 266; Chinchilla 1977, p. 54). Women tend to be "ghettoized" in low-paying, powerless jobs involving activities which are extensions of their domestic roles as housewives. Women also constitute a reserve labor supply to be drawn into and expelled from the labor market according to the needs of the capitalist system (Benston 1969, p. 21; Saffioti 1975, passim). The absorption of women into the labor force during wartime or periods of economic growth enables the capitalist system to maintain acceptable levels of production without being forced to raise wages in response to labor shortages. Conversely, when economic recessions or widescale male unemployment reduce the system's labor needs, women are expelled from the labor force to assume full-time domestic activities in the household (Simeral 1978, p. 168). While men may also constitute a reserve labor force, the ideology that women's sphere is the household makes them especially vulnerable to the exigencies of the labor market. Socialized to view their primary responsibility as being to their homes and families, women tend to develop a basic ambivalence toward their occupational roles which makes them willing to work under unstable or temporary conditions (Saffioti 1975, p. 83).

Many Marxist feminist theorists argue that women's economic marginality is exacerbated in Third World Nations on the "periphery" of the world capitalist system, where a combination of conditions has led to an oversupply of labor relative to the availability of employment opportunities (Saffioti 1975, pp. 79-83). These societies' political and economic dependence upon the more advanced capitalist "centers" in North America and Western Europe has led to the underdevelopment of productive infrastructures, a shortage of domestic capital, and other conditions which have limited their economic growth. Mechanization of agriculture and increasing concentration of land ownership have displaced workers from subsistence production, yet the capital-intensive nature of manufacturing has limited alternative employment opportunities in industry. While these and other factors have combined to restrict the demand for labor, spiraling urban and rural population growth is rapidly augmenting the number of persons seeking waged work. These trends have resulted in high levels of unemployment and underemployment.

Although males as well as females have suffered the economic consequences of these processes, the argument continues, the resulting shortage of employment opportunities has particularly disadvantaged women (Saffioti 1975, p. 89; Chinchilla 1977, p. 50). Patriarchal ideologies stressing women's domestic roles have led employers to reserve scarce jobs in the modern formal sector for the male labor force. Many women have been forced into the already-swollen "informal" sector to assume jobs in domestic service or petty

commodity production or circulation, while others have engaged in subsistence agriculture (Arizpe 1977, pp. 25-26; Chinchilla 1977, p. 50). Since the relative labor surplus in peripheral economies enables employers to keep men's wages at or below subsistence levels, women's food-raising activities are frequently critical to family survival (Deere 1976, p. 10). Thus, while a substantial proportion of Third World women must work to furnish or supplement family incomes, the limited demand for labor combines with patriarchal ideologies to confine women within marginal occupations. In sum, Marxist analyses of women's labor force participation in capitalist societies tend to emphasize structural factors that determine the demand for female labor. While it may appear that a woman's participation in household and/or remunerated work is a product of her own volition, her "choice" actually stems from material and ideological factors that condition and define her work role and employment opportunities.

To summarize, modernization and Marxist feminist theories offer alternative explanations of women's labor force participation and unemployment patterns. The former stresses individual factors such as aspirations, qualifications, and family resources which motivate and/or enable women to compete for jobs within the labor market. Such "supply-side" factors determine the number of women willing and able to fill jobs most needed by society. According to this view, it is the mismatch between women's skills and the economy's needs—rather than a lack of occupational opportunities per se—which accounts for female unemployment. Women's relatively low rates of labor force participation and their confinement within poorly-paid, low-prestige jobs is assumed to reflect women's personal choices and inadequate qualifications.

Marxist-feminist theory, by contrast, focuses upon conditions that affect society's demand for female labor. Inegalitarian class relations that limit the number of well-paying, prestigious jobs; discriminatory labor markets that reserve the best jobs for men; and mechanization and economic stagnation which reduce unskilled and semiskilled jobs all restrict women's occupational opportunities and contribute to female unemployment. As a reserve labor army, women tend to be absorbed into and expelled from the work force according to the capitalist economy's demand for labor.

It should be clear by this point that the two theories are not mutually exclusive, and that both probably explain at least some aspects of women's labor force participation. Nevertheless, it is possible to evaluate which—if either—better accounts for women's employment patterns by applying the theories to a rapidly developing society. The remainder of this discussion will briefly describe one such region, the northern Mexican frontier. I will next present a number of hypotheses derived from the two theories which can be tested using data from the Mexican census and other available sources. While the results of such tests are beyond the scope of the present discussion, I will present some suggestive evidence relevant to the assumptions underlying these hypotheses.

The Context: The Northern Mexican Frontier

The border region of northern Mexico is one of the nation's most rapidly-growing areas. The frontier has one of the higest standards of living in all of Mexico, and the federally-regulated minimum wage rate is matched only by Mexico City. In recent decades migrants from Central and Southern Mexico have flocked to the region in hopes of improving their economic situation by working in frontier cities or across the U.S.-Mexico border. The role of migration in the quadrupling of the area's population since 1940 is indicated by the fact that in 1970, migrants constituted 29% of frontier residents (Fernandez 1977, p. 118). The frontier, the bulk of whose population is concentrated in eight major cities, is also Mexico's most highly urbanized region. Many northern cities have experienced spectacular growth in recent years. Between 1940 and 1980, for example, Tijuana grew from 20,000 to 709,000, while Mexicali's population more than doubled during the 1950s and 1960s (Baird and McCaughan 1979, p. 126).

The tourism- and commerce-based economies of the border cities have not been able to absorb their rapidly expanding populations. Unemployment reached critical proportions in the mid-1960s, when most of the 200,000 workers were left jobless by the termination of the "guest worker" (bracero) agreement between Mexico and the U.S. assumed permanent residence in the frontier. This situation alarmed the Mexican and U.S. governments, as the growing unemployment threatened political instability and massive undocumented migration across the border (Pena 1980, p. 8).

At the same time that northern Mexico was experiencing these demographic problems, U.S. industry was threatened with an economic crisis of its own. Not only were American companies losing their hegemony over domestic and foreign markets to Japanese and European firms, but they were facing a growing number of strikes by an increasingly strident labor force (Pena 1980, p. 9). American companies' strategy for keeping abreast of this competition and avoiding U.S. workers' demands was to utilize the abundant, low-waged labor of Third World workers. Throughout the 1970s a growing number of firms in the labor-intensive textile and electronics industries established assembly plants in Mexico, the Caribbean, and the Far East.

The Mexican border region was an especially attractive site for locating assembly operations. The substantial unemployment due to the cancellation of the bracero program and the steady stream of migration from the Mexican interior had created a large and relatively pliable reserve labor force. The daily minimum wage earned by Mexican workers—between $3.52 and $5.52—was but a fraction of the $25.12 floor set for U.S. laborers (Baird and McCaughan 1979, p. 133). The Mexican government encouraged the establishment of maquiladoras (assembly plants) as a means to abate the growing unemployment and to foster industrial development. In 1965 it joined the U.S. government in instituting the Border Industrialization Program (BIP), whose ambitious goals included generating employment, augmenting personal income, increasing workers' skills, and reducing Mexico's commercial deficit to

the United States. Within fourteen years after the authorization of the BIP, 472 firms providing 99,122 workers with salaries and benefits totalling 5.6 billion pesos existed in the Mexican border region (Pena 1981, p. 13).

According to the maquiladora program's many critics, the program has served the interest of North American companies but has done little to help—and probably much to harm—Mexico. Opponents of the program claim that the BIP has increased the frontier's already-heavy economic dependence upon the U.S. (Woog 1980, p. 104; Baird and McCaughan 1979, p. 135). Others argue that the program has not stimulated Mexican investment, for these "runaway shops" drive to maximize profits by continually relocating their operations in areas with lower labor costs has led them to eschew entanglements with Mexican capital (Woog 1980, p. 98). It is also unlikely, critics maintain, that the BIP has helped minimize Mexico's balance of payments deficit to the United States, for at least half of Mexican workers' wages are spent on the U.S. side of the border (Fernandez 1977, p. 144). Too, since many companies supply their Mexican subsidiaries with out-of-date equipment, workers are frequently trained to work in obsolete production methods (Fernandez 1977, p. 144).

A frequent theme in the critical literature is that the maquiladora program has exacerbated unemployment in the frontier. While some opponents blame the heavy migration flows from the Mexican interior in response to the "pull" of the maquiladoras (Baird and McCaughan 1979, p. 150), others emphasize the "structural imbalance" between the composition of the BIP labor force—80% of which are young women—and the nature of the unemployment troubling the Mexican frontier. (Fernandez 1977, p. 141).

Typical of the latter claim is the thesis presented by Woog (1980, pp. 51, 82, 101). Woog argues that the maquiladora program has not alleviated unemployment in the frontier, since unemployment in the region (as in all of Mexico) is "essentially" a male problem, yet women constitute between 70 and 90 percnet of the maquiladora workforce. The view that unemployment plagues men rather than women is not peculiar to Woog; on the contrary, it pervades much of the literature on Latin American labor markets. It is based, however, on stereotypical imagery of women's ideal roles which bears little resemblance to the real-world circumstances of most working-class women in Mexico and elsewhere. The mythology that work outside the home is a male phenomenon leads to a myopic neglect of the very real suffering which unemployment and underemployment causes women who must work to support themselves and their families. The claim is based on several implicit premises. It assumes either that women generally (1) do not work outside the home (presumably because they are adequately supported by husbands or fathers), or else (2) are consistently able to secure employment through which to support themselves. The implication of this argument is that many or most women do not have an economic need to work, and thus do not participate in the labor force.

These implicit premises are consistent with certain assumptions underlying modernization theory. They share with this perspective a tendency to view women as partners of men who support them economically, to attribute remunerated work to personal choice rather than economic necessity, and to assume a sufficient range and number of jobs for those willing and able to fill them. While caution dictates against drawing too close a parallel between the two sets of assumptions, it is clear that modernization theory is not free from the stereotypical imagery of women's work which underlies Woog's stance on female unemployment. A modernization theorist could, of course, sidestep the issue by claiming that northern Mexico is not sufficiently "modern" to fall within the scope of societies to which its theory of competitive urban labor markets applies. Yet such a solution begs many questions essential to understanding women's labor force participation and unemployment in northern Mexico and elsewhere.

A better strategy, I would argue, is to derive hypotheses from both modernization and Marxist feminist theories to be empirically tested against data from northern Mexico. By demonstrating the strengths and deficiencies of the two perspectives, this process would contribute to a synthetic theory of women's work and its relation to socioeconomic development. It would also demonstrate the truth or falsity of the stereotypical view of women's employment and unemployment in northern Mexico.

Recall that modernization theory explanations of women's employment patterns stress "supply side" factors—qualifications and aspirations which women bring with them to the (presumably competitive) labor market. This perspective has it that a relatively developed society affords a sufficient number and diversity of jobs for qualified women who choose to work for pay. The key explanatory variables are thus particular characteristics of women which channel them out of the home and into these jobs. Such factors include education, training, past work experience, literacy, ambitions/aspirations, age, stage in the life cycle, marital status, and husband's income.

Marxist feminist theory, on the other hand, emphasizes factors which affect the economy's demand for women's labor. According to this view, women may have the necessary commitment and qualifications to enter and to remain in the labor market. Yet if the labor market is structured in such a way that employment opportunities do not exist, or are closed to women, then they will have little choice but to remain in the household, join the ranks of the unemployed seeking work, or be confined within a limited number of "female" occupations. Rather than taking for granted a favorable ratio of employment opportunities to female job aspirants, this view considers the structural factors which affect the number and kinds of positions open to women. Key variables from this perspective thus include the degree of sex-based labor market segmentation, the level of male unemployment, the degree of industrialization and other factors which affect job availability, and the rate of population growth.

The following are some hypotheses specifying the direction of relationship

between some of these variables and women's employment and unemployment. The list is limited to those which could be tested using data from the Mexican census and other currently available sources.

Hypotheses: Modernization Theory

(1) Education $\xrightarrow{+}$ Women's Labor Force Participation

Discussion: This hypothesis predicts that better educated women will have the competitive advantage on the labor market. Several considerations should be taken into account when testing this hypothesis. First, although it specifies a positive linear relationship among the variables, the true relationship may be curvilinear. There is some evidence in the literature to suggest that the least and best educated women have the highest labor force participation. But whether education is the critical factor, or whether its effects are confounded with other dimensions of socioeconomic status is an issue which must be explored empirically. Clearly, an adequate test of this hypothesis would require controlling for the effects of income. It is probable that poor, uneducated women work out of economic necessity, and that they would work in spite of, rather than because of, their lack of education. Second, this hypothesis specifies nothing about the type of jobs in which women participate. A comprehensive analysis of the education-employment relationship would consider such job-related factors as prestige ranking, economic sector, job stability, etc.

(2) Marriage $\xrightarrow{-}$ Women's Labor Force participation

Discussion: The assumption underlying this proposition is that women with husbands do not need to work to support themselves. A key problem involved in testing this hypothesis is arriving at a suitable definition of "marriage." A woman may be involved in a stable partnership which has not the civil or religious status accompanying a formal marriage. Recognition of this fact leads the Mexican census to employ the category "stable consensual union" as well as formal marriage. While one could plausibly argue that the predicted relationship would also hold for women in this type of union, this issue should be addressed empirically.

(3) Age $\xrightarrow{-}$ Women's Labor Force Participation

Discussion: This hypothesis predicts that women's paid employment depends upon their stage in the life cycle. It assumes that women drop out of the labor force as they grow older, marry, and have children. However, because age is closely related to marital and motherhood status, an observed negative relationship could be due to the latter factors rather than age per se. Controlling for these intervening variables would indicate whether age has an independent effect on women's employment. A second consideration is that the true relationship between age and labor force participation could be curvilinear. Aside from legally-specified minimum age constraints, many young women are full-time students who have not yet entered the labor force. Also, women may return to the labor force at older ages, after they

have raised their children.

(4) Socioeconomic Development $\pm\rightarrow$ Dispersion of Women Among Occupations and Economic Sectors

Discussion: The assumption underlying this hypothesis is that modernization both erodes traditional constraints which confine women to certain occupations and expands the range of specialized occupations within a society. As they take advantage of the increased opportunities entailed by this wider range of job options, women become dispersed throughout the labor market. Subjecting a longitudinal hypothesis such as this to empirical test requires addressing several issues. Are data from successive censuses comparable? Are data from earlier censuses accurate? Is the time span between the present and the earliest census for which such data were collected sufficiently long for the predicted trend to be observed?

(5) Mate's Income $-\rightarrow$ Woman's Labor Force Participation

Discussion: Underlying this hypothesis is the assumption that women whose partners earn adequate wages need not work to supplement family income. Testing this hypothesis would require controlling for factors such as education and other dimensions of family socioeconomic status with which the effects of husband's income may be confounded. This is clearly an individual-level hypothesis which would be difficult to test with data from aggregate sources such as the census.

Hypotheses: Marxist Feminist Theory

(1) Male unemployment $-\rightarrow$ Women's Labor Force Participation

$\pm\rightarrow$ Women's Unemployment

Discussion: These propositions assume that, because labor markets discriminate against women, when jobs are scarce they tend to be reserved for men. Women are driven out of the labor force to join the ranks of the unemployed seeking work, or to assume roles as full-time houseworkers. The difficulty here is that an observed relationship between male and female unemployment could be spurious: the two may vary together not because the former causes the latter, but because both result from a third influence or set of conditions. Longitudinal or historical research which compared variations in male and female unemployment over time might supplement such an analysis.

(2) Rate of male in migration $-\rightarrow$ Women's Labor Force Participation

$\pm\rightarrow$ Women's Unemployment

Discussion: The assumption underlying these predictions is that when a rapid influx of male migration creates a relative scarcity of jobs, migrants tend to displace women from the labor market, thereby increasing female unemployment. Like the preceding hypotheses, this proposition presupposes sex-based labor market discrimination, and assumes women constitute a reserve labor

force. An adequate test of this hypothesis would involve controlling for various antecedent variables, since an observed relationship between male in-migration and female unemployment may be spurious. Both may be effects of a third set of factors such as economic crises or rural stagnation which would both spur rural-to-urban migration and lead to economic decline and unemployment in the cities.

(3) Rate of Natural Increase in Population $\overset{-}{\rightarrow}$ Women's Labor Force Participation

$\overset{+}{\rightarrow}$ Women's Unemployment

Discussion: The underlying premise of these propositions is that job shortages due to rapid population growth tend to exclude or expel women from the labor force. These hypotheses present the possible complication of "feedbacks" from the dependent to the independent variables: women displaced from the labor force to the household may choose to have more children, thus augmenting the population's rate of natural increase. Such a phenomenon could only be observed, however, through a longitudinal analysis.

(4) Sex-based Labor Market Segregation $\overset{-}{\rightarrow}$ Women's Labor Force Participation

$\overset{+}{\rightarrow}$ Women's Unemployment

Discussion: Discriminatory labor markets which segregate women within certain "female" occupations are assumed to limit the number of jobs available to women workers. Such a situation is expected to lower women's labor force participation and to aggravate female unemployment. Testing these hypotheses requires devising an adequate measure of labor market segregation.

(5) The level of female unemployment will be higher than that of males from comparable social classes and age groups.

Discussion: This hypothesis shares the same assumptions of labor market discrimination and women's role as a labor reserve as the preceding four hypotheses.

Conclusion

While an adequate test of these hypotheses is beyond the scope of the present analysis, elsewhere I report some evidence relevant to some of their underlying assumptions (Tiano 1982). Drawn primarily from the 1970 Mexican census, these data challenge many stereotypes about women's employment in northern Mexico. The statistics on women's employment belie the common imagery that Mexican women's seclusion in the household makes extra-domestic work primarily or exclusively a male activity. Women's labor force participation in frontier states, as in the nation as a whole, is substantial: some 33% of all women ages 20-29 work for pay outside the home, while about 20% between 30 and 50 years of age are gainfully employed. Women clearly do not all drop out of the labor force as they mature and acquire

families. Further, women's labor force participation has increased over time: between 1950-1979, the percentage of employed women jumped from 13 to 21 (Tiano 1982, pp. 12-13).

Nor is it true that only men are plagued by unemployment. In northern Mexico, as in the country generally, unemployment rates for women are almost twice as high as those for men. The 1970 census figures describing open unemployment, which most economists agree tend to underestimate actual levels, show 5% of adult women as compared to 2.8% of men, to be jobless (Tiano 1982, p. 14). Recent statistics also challenge the stereotype that women need not work outside the home because they have husbands to support them. In each of the northern states, as in Mexico as a whole, between 75 and 80 percent of the economically active female labor force are unmarried. It is likely that these women work out of financial necessity in order to support themselves and their children (Tiano 1982, p. 15).

I have argued elsewhere (Tiano 1982) with numerous others (NACLA Baird and McCaughan 1974; Pena 1981) that a key factor underlying the rapid growth of the maquiladora program is the availability of a large pool of female labor in frontier cities. The category from which assembly plants draw the lion's share of their work force—women aged 15-25—has the highest levels of unemployment of all age-sex categories (Tiano 1982, p. 14). This suggests that, contrary to the claims of many opponents of the BIP, it is not so much that the existence of maquiladoras causes unemployment in the region, but rather that the existence of lage masses of unemployed workers leads to the proliferation of maquiladoras. Similarly, Woog and others miss the boat when they view the region's continued unemployment problems as merely a reflection of the maquiladoras' preference for women workers. A more accurate analysis would attribute causal priority to the large numbers of unemployed women—the female labor reserve—which makes women especially attractive as maquiladora workers.

Determination of the causes of female unemployment in the region would require a detailed analysis of factors such as women's educational, skill, and motivational levels which affect the supply of suitable maquiladora workers, as well as the degree of sex-based labor market segregation, the rate of male and female in-migration, and other conditions influencing the economy's demand for female labor. Nevertheless, it would appear that many of the modernization theory assumptions concerning female employment in areas such as northern Mexico may be inaccurate, and that the Marxist feminist concept of the female labor reserve helps explain women's participation in the maquiladora work force.

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The Role of Women in the Production of Food and Nutrition in Less Developed Countries

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Human nutrition depends upon the production, acquisition, storage, preparation and eating of food. Each of these processes, which are linked in various ways, represent a series of interrelated activities in which both women and men take part. This paper reviews the roles women play in these food-related activities in relation to the level of nourishment societies produce. Women are intimately involved in producing a well or ill-nourished society. This paper will attempt to demonstrate that while women are deeply and uniquely involved in producing nourishment, it is the *circumstances* under which they enact their roles that are chiefly responsible for the degree of nourishment achieved by a society. By focusing on women's roles in nutrition and on the context in which those roles are enacted, we obtain clearer explanations of the causes of malnutrition. In addition, an understanding of how and why development has produced greater rather than less malnutrition due to *deleterious alterations* in women's roles is obtained.

This paper begins with a brief description of current world nutrition problems. It is followed by a discussion of women's roles in the production of food and nutrition. The impact of development on these women's roles and

their nutritional consequences is then considered. The paper concludes with recommendations for future research and policy.

The Extent and Magnitude of Malnutrition in the LDCs[1]

The adverse effects of malnutrition on both individual and national development have been well-documented. Malnutrition is the major cause of the excessive child mortality in LDCs (Bengoa 1974; Call and Longhurst 1971; Puffer and Serrano 1973; DeMaeijer and Bengoa 1969; Chase and Martin 1970). A malnourished child suffers impaired physical and mental development, reduced resistance to infections, apathy, and behavioral unresponsiveness (Cravioto 1970; Soloman, Boranovsky and Perura 1971; Birch 1972; Scrimshaw, Taylor and Jordon 1968; Kallen 1971). A malnourished citizenry retards national advancement: a high child mortality rate interferes with population control; children with limited intelligence cannot achieve the education necessary for the industrialization of society; hungry laborers cannot reach a high level of working efficiency; the increased incidence of disease decreases school and job attendance (Gyorgy 1968; Cook 1971; Kallen 1971; FAO 1962; Call and Longhurst 1971; Berg 1969b; Lowenstein 1968).

Malnutrition and Mortality, and Other Problems

The extent of malnutrition in LDCs is, at best, greatly underestimated. Moderate forms of malnutrition (subclinical malnutrition) are difficult to detect, and clinically apparent cases represent only a small proportion of the world's malnourished. Using protein-calorie malnutrition as an example, Bock aptly describes this problem:

> The relationship between subclinical malnutrition and subnutrition on the one hand and clinically apparent malnutrition on the other hand is sometimes expressed through the analogy of an iceberg. That part of an iceberg which is visible above the surface of the ocean is only a small part of the total.... I have conceived of a pyramidal iceberg to convey these concepts (1966, p. 889).... the clinically serious problem of kwashiokor and protein-calorie malnutrition disease represented by the apex of the triangle pales into insignificance when it is compared with the effects of mild to moderate protein-calorie malnutrition presented in the numerically larger, lower, subclinical part of the pyramid (1966, p. 890).

Rough estimates from the World Health Organization suggest that over half of the world's current population, or approximately 2 billion men, women, and children, suffer from various nutritional deficiencies.

Malnutrition is a major direct or indirect cause of child and infant mortality in the less developed countries, as the examples in Table 1 demonstrate. In these countries children under five generally make up one-fifth of the population, yet their deaths are a disproportionate 60-70 percent of the total mortality (Berg 1973, p. 4). In rural, urban, and sub-urban areas of Latin

[1]This portion of the paper is drawn from McIntosh, Evers, Callaghan and Wilcox 1976.

America, malnutrition or nutritional deficiencies are considered to be the direct and indirect cause in 20 to 47 percent of all deaths in children under 5 years of age. Other studies put the figure closer to 50 percent for children under 5 in the Philippines, Mauritius, and Thailand (United Nations Statistical Office 1967, Table 25; Khanjansathiti and Wray, pp. 10-11).

Nutritional deficiency contributes indirectly to mortality by lowering resistance to infection. Measles, respiratory and gastrointestinal infections, and diarrheal diseases become virulent killers when accompanied by malnutrition (Bengoa 1971; Williams 1962; Robson and Jones 1971; Behar, Ascoli, and Scrimshaw 1958).

The magnitude, and perhaps the significance, of the effects of malnutrition upon those who survive is greater than the mortality attributed to it. According to Berg:

> More than two-thirds of the 800 million children now growing up in developing countries are expected to encounter sickness or disabling disease either brought on or aggravated by protein-calorie malnutrition (1973, pp. 4-5).

More important than the illnesses brought on by lack of proper nutrients is the permanent damage caused to the brains of young children by protein-calorie malnutrition (PCM). Although no figures are available to determine the precise magnitude of the problem, sample surveys in Africa and South America indicate that many children who suffered from severe malnutrition early in life are mentally retarded in various degrees (Stoch and Smythe 1967; Cravioto 1971). Malnutrition has serious consequences for adults as well, particularly for pregnant and lactating mothers, who suffer higher rates of maternal morbidity and mortality and higher rates of involuntary abortions (Jackson 1972; Jeans, Smith, and Stearns 1955).

Table I. Mortality from Nutritional Deficiency and Immaturity as Underlying or Associated Cause in Children Under 5 Years of Age in Latin America 1968-1970

CITIES	TOTAL DEATHS RATE PER 100,000 POPULATION	PERCENT OF TOTAL DEATHS DUE TO NUTRITIONAL DEFICIENCY
Recife, Brazil	2933.6	46.2
La Paz, Bolivia	2660.0	36.0
San Salvador, El Salvador	2636.2	37.2
Resistencia, Argentina	2070.0	40.0
Monterrey, Mexico	1813.8	36.1
Sao Paulo, Brazil	1769.3	30.4
Cali, Colombia	1607.7	36.4
Cartagena, Colombia	1459.3	44.7
Medellin, Colombia	1444.8	42.3
Santiago, Chile	1298.7	23.7
San Juan, Argentina	1291.6	20.2
Ribeirao Preto, Brazil	1088.4	34.5
Kingston-St. Andrew, Jamaica	1038.5	19.4
SUBURBAN		
San Juan, Argentina	2194.7	27.4
Franca, Brazil	1942.7	36.4
RURAL		
San Salvador, El Salvador	5049.0	46.9
Viacha, Bolivia	4806.0	30.4
San Juan, Argentina	2403.8	31.1
Chaco, Argentina	2387.3	37.6

Source: Modified from Table 88 in Puffer and Serrano (1973, p. 165).

Prevalent Forms of Nutritional Deficiency

There is general agreement among international nutritionists regarding the forms of malnutrition dominant in the world today. Protein-calorie malnutrition, nutritional anemias, endemic goiter, and vitamin A deficiency are the most prevalent deficiency diseases (Akroyd 1970; Berg 1973; Robson 1972; FAO/WHO 1971; WHO, 1972). Other deficiency diseases—beri beri, pellagra, rickets and scurvy—were common until recent years but their prevalence has now decreased.

Protein-Calorie Malnutrition

Protein-calorie malnutrition (PCM) is undoubtedly the nutritional disease that takes priority of urgency "because of its high mortality rate, its wide prevalence, and the irreversible physical and sometimes mental damage it may cause" (WHO 1972, p. 160). the magnitude of the problem has been estimated by Bengoa (1974) in a summary of 77 nutrition surveys between 1963 and 1972 covering 46 developing nations (see Table 2).

Although the term "protein-calorie malnutrition" does not refer to one single set of clinical features, PCM is always accompanied by retardation of growth and development, disordered tissue repair due to protein deficiency and energy shortage due to a caloric deficiency (McLaren 1966; FAO/WHO 1971). The principle clinical syndromes are marasmus and kwashiokor.

Marasmus

This form of PCM is characterized by muscle wastage, a loss of subcutaneous fat, and low body weight due to severe restriction of calories and protein over a prolonged period (Aykroyd 1970; McLaren 1966; FAO/WHO 1971). Marasmus is mainly a disease of infancy resulting from early, abrupt weaning, or the complete absence of breast feeding. A cause of increasing significance is the substitution of unhygenic artificial foods for breast milk. Infections in these cases are frequent; the overall prognosis for recovery generally is not good. With urbanization there is a marked tendency toward a rise in this form of PCM (Sadre, Emami, and Donoso 1971; Khanjanastheti and Wray; Monckeberg 1970).

Table 2. Estimated Numbers of Children Aged 0-4 Years Suffering from Severe or Moderate Protein-Calorie Malnutrition (PCM) in Three Regions of the World.

REGION	SEVERE PCM	MODERATE PCM	TOTAL
Latin America	700,000	9,000,000	9,700,000
Africa	2,700,000	16,000,000	18,000,000
Asia (excluding China and Japan)	600,000	64,000,000	70,000,000
Total	9,400,000	89,000,000	98,400,000

Source: From Table 3, Bengoa (1974).

Kwashiokor

Characterized by retarded growth, edema, enlarged liver, and mental apathy, this form is due to a protein deficiency and is frequently accompanied by a deficit of calories (Aykroyd 1970; McLaren 1966; FAO/WHO 1971; WHO 1972). Kwashiokor results from prolonged breast feeding without the introduction of high protein food supplements after six months of age. The disease is almost always precipitated by an infection, and occurs most often in the child's second year.

The dominant form of PCM varies from region to region. Kwashiokor predominated in Africa; in LDCs on other continents marasmus is more prominent.

Any efforts to alleviate PCM must consider total calorie consumption as well as protein intake. Failure to ingest the required number of calories can produce a protein deficiency in spite of adequate intake of protein. An understanding of the protein-carbohydrate interrelationship is vitally important to nutrition planners. Protein, in particular adequate amounts of the eight essential amino acids, is necessary for growth and repair of tissues. Carbohydrates are the major energy source, yielding glucose upon digestion for oxidation by the cells. During metabolism the energy needs of the cells take priority over their amino acid requirements so that an inadequate intake of carbohydrates results in the utilization of amino acids as energy at the expense of the growth and repair needs of the body. Thus a "calorie" (carbohydrate) deficiency precipitates a protein deficiency (FAO 1973).

Nutritional Anemias

Nutritional anemias are considered among the most important nutritional diseases "because of their wide distribution, their contribution to mortality from many other conditions, and their effects on working capacity" (WHO 1972, p. 160). Their prevalence is global (see Table 5). Pregnant women, children under two years, and adolescent girls are the groups most commonly affected by the anemias (Aykroyd 1970).

The most frequently encountered form of these diseases is iron-deficiency anemia. Iron intake may not necessarily be adequate; parasitic infestations (e.g., hookworm) and inhibitors in foods (phytates) can increase iron losses through excretion or prevent absorption of iron (Aykroyd 1970). Infant foods are notoriously low in iron. Since children under five years are extremely vulnerable to protein and calorie deficiencies, it is not surprising that deficiencies of other nutrients also occur in this age group. There is a marked increase in the iron requirement during pregnancy; the prevalence of anemia in pregnant women is not uncommon even in developed nations (WHO 1972). Iron deficiency is not only a danger to health, but it has recently been implicated as an impediment to full working capacity.

Megaloblastic anemia usually results from inadequate ingestion of folic acid. Little information is available on the prevalence of this type of nutritional anemia (WHO 1972). Recent data suggest that pregnant women are commonly affected (see Table 3).

Table 3. Prevalence of Nutritional Anemias in LDCs

COUNTRIES AND REGIONS	SUBJECTS	RESULTS
Latin America (7 countries) (Anonymous 1972)	899 women in last trimester of pregnancy 485 nonpregnant women from similar low socioeconomic class	48.5% of the pregnant women and 21.2% of the nonpregnant women have iron deficiency anemia
India (WHO, 1972)	100 women in third trimester of pregnancy	96% were iron deficient 73% were deficient in folic acid, and 52% were deficient in vitamin B_{12}
Thailand (Migasena 1972)	121 rural children	70% of the children had iron deficiency anemia (many in spite of an adequate intake)
Indonesia (Basta and Churchill 1974)	571 adult males	45% of the men had iron deficiency anemia
Colombia (Ortega, Tellez, and Henao 1973)	1400 families	39% of the subjects were iron deficient
Summary of world nutrition surveys (WHO 1972)	Africa (excluding Bantus of South Africa)	6-17% of the men, 15-50% of the women and 30-60% of the children are iron deficient
	South Africa	5-15% of the men, 10-35% of the women, and 15-50% of the children are iron deficient
	Asia	10% of the men, 20% of the women, 40% of the pregnant women, and 50-92% of the children suffer from iron deficiency anemia
	Eastern Mediterranean	25-70% of the children, 20-25% of pregnant women are iron deficient
	India	20-50% of the pregnant women are deficient in folic acid

Endemic Goiter

A dietary deficiency of iodine is the main cause of endemic goiter (WHO 1972), which is prevalent on every continent and in most countries (Kelly and Snedden 1960; Bengoa 1966). Brazil, India, Mexico, Guatemala, Colombia and many countries in South-East Asia have high incidence rates (Aykroyd 1970). Endemic goiter is considered a major nutrient deficiency disease because of its wide distribution; however, it is easily prevented through iodization programs. This deficiency generally results in overall debility, reducing the capacity to perform work.

Vitamin A Deficiency

Xerophthmalia or vitamin A deficiency is a widespread problem in most of the developing countries (Bengoa 1966). Vitamin A deficiency deserves high priority "because of its contribution to the mortality of malnourished children, its relatively wide prevalence, and the permanent blindness it causes" (WHO 1972). In many parts of the world the staple food, which may be the only food supplement given to children, contains negligible amounts of either vitamin A or its source carotene. Because rice is very low in vitamin A, xerophthalmia is very common in the rice-eating countries of South-Asia (Aykroyd 1970; Gyorgy 1968). Although inadequate intake is mainly due to a lack of vitamin A sources (animal foods, green and yellow vegetables) in the available food supply, food customs can also limit the consumption of foods that have a high vitamin A content (Wolff 1965).

Vitamin A deficiency is not always due to a lack of dietary vitamin A. Instead, the carrier protein (retinal-bending protein) necessary to transport vitamin A from the liver to the rest of the body may be missing (Fisher and Bender, 1979). The interrelationship between these two nutrients—protein and vitamin A—means that vitamin A deficiency can result from protein malnutrition. Thus, the limiting factor for the low serum vitamin A levels observed in protein-calorie malnutrition is the low level of retinal-binding protein rather than inadequate vitamin A intake. In Indonesia, vitamin A deficiency has been reported in 75 percent of severe cases of kwashiokor (Bengoa 1966). The coexistence of protein malnutrition and xerophthalmia has been confirmed in Haiti, Morocco, and Southeast Asia (Gyorgy 1968).

We next turn to the processes under which malnutrition is produced, including the roles women play in such production.

The Role of Women in the Production of Food and Nutrition

In order to understand the process by which food and nutrition are produced, a heuristic model has been devised, based on McIntosh (1975). the model, displayed as Figure 1, suggests societies, viewed as systems, contain subsystems which produce various outcomes. In this case the outcomes are food and nutrition.

Acquisition of Food

As the diagram indicates, food enters the system through its acquisition. In

many countries of the world, food is acquired by several processes. The first process, the oldest historically, is through the gathering of roots, leaves, insects, berries, fungi, etc. from the uncultivated environment. In some societies, gathered materials constitute only a small portion of the total diet; in others, it provides up to 30% of the daily diet (Smith 1970; Owen 1973). Women have always, and continue to be, responsible for gathering activities.

In most Third World countries, farming food crops is the principal source of the diet. Upwards to 90% of the population of such countries are involved in agricultural production. Farming is generally considered by Westerners to be primarily a male activity because of the strength and skills thought to be required. However, in the majority of cases, women are integral parts of the agricultural labor force, and in Africa constitute the major portion of persons employed in subsistence agriculture. The extent to which females hold major responsibilities in agriculture is determined by cultural norms and technology. Generally, where swidden agriculture is practiced, women perform the majority of tasks. In systems where cultivation is practiced, women hold somewhat fewer responsibilities. (See Boserup 1970, pp. 25-26).

Culture and Division of Labor: Sources of Roles and Constraints

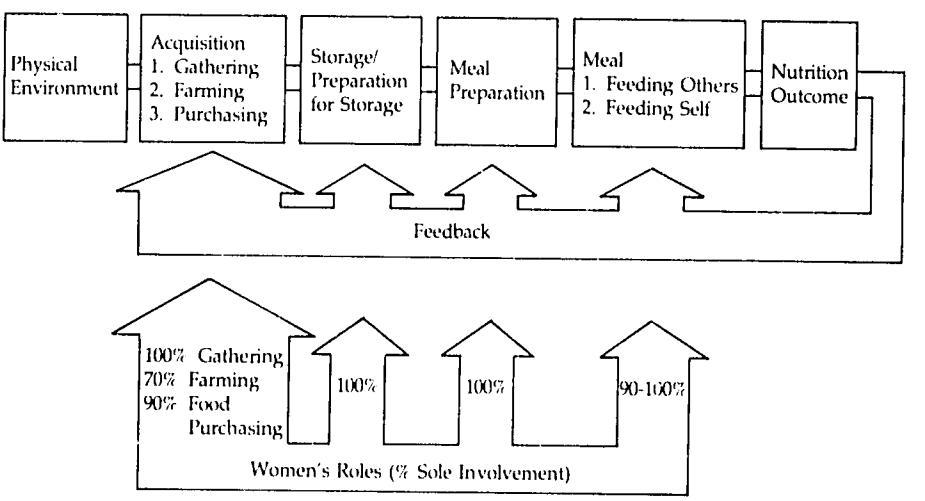

Figure 1. The Food and Nutrition Production Subsystem of Society. (Based on McIntosh 1975).

Swidden agriculture is labor intensive; technological inputs are simple (hoes, machetes) and is thus expensive in terms of time and energy. The activities involved in this type of farming include: felling trees and cleaning brush; planting, weeding; harvesting and transporting the harvest to its destination (Boserup 1970, p. 17). In addition to these tasks, women also aid their husbands with cash crops and tend to livestock. One result of such involvement is that women spend much of their day producing the food the family eats and/or sells.

Finally, food is acquired to varying degrees through purchase. Women generally have the responsibility for going to market to purchase needed food and other items. Part of the trip to market entails yet another female responsibility, namely the sale of agricultural surpluses to generate income.

Food Preparation

The preparation of food for storage is also principally a female concern as is described as follows:

> Women are responsible for most of the food processing and much of the food storage for family use. They dry leaves, pulses, cereals; they make curds and cheese, smoke meat and fish; they ferment, grate, and dry cassava and carry out a wide range of food preservation processes. They build stores for grains and dried legumes, and devise a wide variety of containers. (U.N./ECA 1976 cited in FAO/PAG 1979, p. 117).

Such activities are often highly demanding in terms of time and energy. For instance, one study relates that women in some parts of Africa must spend one hour for each family meal, preparing the roots or grains prior to cooking (Boserup 1970, p. 164). The grinding of corn for tortillas requires four to six hours a day, according to Lewis (1951, p. 99).

Meal Preparation

The preparation of food as meals is virtually "monopolized" by women in most communities (Boserup 1970, p. 16). This process involves, once again, a series of interrelated, labor intensive activities. Water and firewood must be hauled, often at great distances, on the shoulders of women and/or young girls. Fires must be tended. Foodstuffs themselves may require husking, soaking, chopping, carving, mixing, setting, etc. As little western kitchen technology is available, much less suitable, these activities require intensive human effort.

The effort involved in the preparation of meals is greatly affected by the size of the family, the number of boarders and the number of guests being entertained.

Meals

Meals constitute social as well as biological activities. The eating of food is ritualized and standardized and serves many social functions (Bell and Vogel 1968; McIntosh 1975).

Meals, involving the family as a group, represent a mechanism by which crucial information regarding family activities may be shared. Learning vari-

ous aspects of culture, and specifically, of food, food beliefs, tastes, etc., occurs among children. Power and authority are asserted by older males and females for all family members to observe and remember.

Women once again play a crucial part of mealtime activities. Much of the information shared and the teaching provided is by adult females. Men may also remind children as well as their spouses the nature and extent of their authority during the meal.

Children require particular attention during meals because of their greater need for help and lack of self-direction and concern. It is women who generally see to it that their children eat. Even in those cultures in which children eat last because of their perceived lesser importance and needs, women continue to see to it that the children do indeed receive the leftovers. In other instances, women willingly sacrifice a portion of their meals to insure their young receive enough (Tan et. al. 1970).

Role Performance and Role Constraint

Having rights and responsibilities does not necessarily imply the capability to follow through. While we designate certain individuals as "good" fathers or mothers, suggesting that they handle their roles well, we are also aware that there are less competent individuals in similar circumstances. There exist inadequate mothers and fathers as well.

Incompetent role performance can occur for a variety of reasons. Role incumbents may lack the requisite skills or interest or both. More likely inadequate performance is due to a lack of the resources required to accomplish role tasks. Such resources include time, energy, money, materials, decisionmaking power, and technology. When resources are inadequate, it is likely that role performance will be too. In addition, under conditions of social change, when social role relationships are rendered unstable, existing constraints may become exacerbated. We will turn to resource constraints under more dynamic conditions of societal change once these constraints have been examined in static situations.

Time

The "new home economics" theory developed by Becker (1965) and Schultz (1964) stresses time as a resource of fundamental importance. For households to maximize utility and meet their needs, time must be allocated efficiently. At the level of roles, this suggests that individuals with particularly numerous and onerous role responsibilities must also be efficient allocators as well. Time is not without its limits and human beings are constrained in the amount that they may accomplish in a given 24 hour period.

The more tasks an individual has, the more difficult it is for their successful completion. Likewise, the greater the difficulty of tasks and the attendant requirements of time, the greater the chances of suboptimal performance.

There is ample evidence from less developed countries that women have been allocated an enormous burden of tasks which are highly time-consuming. A study of rural women in Pakistan reports a typical work day

for women consisting of 14 hours, 5 of which are spent caring for domesticated animals. At harvest a women spends 10 hours per day in the fields (Castillo 1977, p. 2). Reports from Africa indicate 6-7 hours per day are devoted to meals, hauling fuel and water, and tending food and cash crops, (FAO/PAG 1977, p. 118). The survey neglected to measure the additional time that women spend caring for children, cleaning house, marketing for both purchasing and selling products, and so on. In households where the men have left in order to take jobs in factories or plantations, "the younger ones (children) may have to go to bed hungry because their mother at the end of her day's work is often too tired to light the fire and prepare the supper" (Paulme 1960, p. 8).

Breast Feeding and Time Constraints.

Women who breast feed their children and who work accomplish this feeding in several ways: 1) by bringing the child to work; 2) having the child wet-nursed by another; 3) by early termination of the breast feeding. African and Asian women engaged in agriculture use some combination of the first two solutions to the problem of infant feeding. In urban areas, however, it is often neither feasible or socially acceptable to bring children to the workplace and wet nurses appear more difficult to obtain. Early termination of breast feeding results in substituting the bottle and solid feeding. Not only is such termination often premature in physiological terms, but often the substitute foods are unsanitary, resulting in diarrhea and gastroenteritis. A combination of such factors results in marasmus.

With increasing urbanization and female employment rates, marasmus is on the increase worldwide.

In general, however, the nutritional impacts of insufficient time are as yet unknown. The FAO/PAG (1977) report argues that African women, when reallocating their time, make minimal reductions in the amount of time spent on meal preparation. Other observers have argued that as time pressures grow, the time spent making meals and feeding children is significantly reduced (Sharman 1970; Shofield 1974). There is evidence from impoverished groups in the U.S. that working women with little available time and no help from others are producing seriously malnourished children (Scrimshaw 1974).

In the Third World, it is unclear how serious time constraints on women's time are and whether these shortages may be related to malnutrition in either the women themselves or their children. As women often receive aid from daughters, sisters, mothers, and mothers-in-law, time constraints may leave less serious consequences than suspected. Clearly, research is needed in order to determine whether a time constraint-malnutrition relationship exists.

Energy Constraints

One of the most fundamental aspects of human life is energy. Humans must take in energy in order to do work, be active, to even exist. In order for the body to function—the heart to beat, the stomach to digest, the lungs to inhale, the brain to function—energy is required. Basal metabolism at rest

(BMR) is that energy required for the body to simply function. Generally, an average sized 20 year old woman would require approximately 1,000 to 1350 K calories over a 24-hour period to meet BMR needs alone (Fisher and Bender 1979, pp. 23-29).

Women engaged in light work (house cleaning) would require an additional daily 100 k calories; an increase in the amount of work by 10% represents an increased need for 70 k calories. Light domestic work might require up to 180 k calories for 1 hour; gardening for 25 minutes, 120 k calories; heavy work equivalent to coal mining for 8 hours, 180 k calories (Fisher and Bender 1979, pp. 28-29).

Unfortunately, little is known about the actual energy requirements of highly active women in LDC's. Energy flow studies, which examine energy intake and expenditure of workers have focused solely on men (Poleman 1972). We can infer, however, from other data that women in the Third World may experience energy insufficient diets. Low birth weights, prevalent in the Third World, are good indicators of maternal nutritional status. An underweight baby is generally produced by an underweight mother.

As is clear from Figure 1, feedback occurs from nutritional outcomes to the processes that produced it. Well-nourished individuals have greater energy to devote to their food production tasks than those who are ill-nourished. In fact, available evidence strongly implicates malnutrition with reduced working capacity. A daily intake of 1800 calories for men causes a loss of 30% of muscle strength and 15% of precision of movement (Berg 1973, p. 13). Other studies have implicated iron deficiencies in short-falls of working capacity.

Women who are malnourished are likely to be less effective in their various tasks, and this coupled with other constraints, leads to still further malnutrition for the female and those in her care.

There are some existing data that suggest maternal energy and children's nutrition are indeed related. In a recent study Marchione (1980) finds that children's height and weight (proxy measures of nutritional status) were negatively related to the distance from the household to the water supply. Hauling water is relatively heavy work, often involving some distance. The average roundtrip distance from the house to water in Africa is 3 miles, an effort which can absorb 25% of a woman's caloric intake (FAO/PAG 1977, p. 69). Each trip involves the carrying of no more than 10 to 20 gallons, and so, numerous trips must be made. If the same person must make several trips to provide water for the household, great energy as well as time must be expended. Marchione's study may thus provide indirect evidence of the deleterious effects of female energy shortages.

Pregnancy and Energy Costs

Energy requirements during pregnancy increase by 15%; an additional intake of 250-300 mg of iron is also needed by normal, adult women (Winick 1980, pp. 6-7). Women who become pregnant "early" (under the age of 17) have greater needs than these in that these girls are still growing themselves

(Wishik and Vanden Vynckt 1975, pp. 11-17).

In societies where women's work loads are not reduced during pregnancy, energy deficits will either be created or made worse. Furthermore, the appearance of energy deficits may lead to a vicious circle in which energy deficits are made worse.

Women experiencing either "early pregnancies" or "late pregnancies" (due to too many pregnancies too often) become malnourished, give birth to under weight children which may lead to early infant death, which then is followed by additional pregnancies. With each subsequent pregnancy, the female is left with fewer stores of energy thus making the successful completion of role tasks and the fate of future pregnancies increasingly problematic.

Power Constraints

Power consists of the ability to make others do one's bidding. In terms of roles, however, power is the ability to control the resource necessary in order to complete role tasks. The greater the power the role incumbent has over resources, the more effective the completion of these tasks.

In order for women to successfully complete their agricultural and domestic responsibilities some degree of control over resources is necessary. When control is lacking or threatened, task completion becomes problematic.

The requisite resources for roles in food production, food preparation, and so on are money, material resources, time, and energy. Power in relation to these resources permits their reallocation when necessary. It also means that persons with less to say over these resources (e.g., children) can be induced to allocate more of their time and energy to specific areas of work, such as harvesting.

Women frequently have the lion's share of responsibilities but little control over requisite resources. Women have no legal status with regard to land ownership in many parts of the world, despite their heavy involvement in agriculture (Development Alternatives, Inc. 1974, pp. 7-27). In areas of Africa where women had some degree of control over land through clan protection, as land has become commercialized, ownership has tended to fall into the hands of men.

Control over husband's time and energy inputs into subsistence and cash crops is also a limiting factor. In most cases, women are in no position to force spouses to reallocate these resources in order to provide additional input into food production. Instead, with the use of plantation and factory jobs, men have migrated, leaving their wives alone to take up the slack. Women are thus left with increasing burdens on their already stretched resources of time and energy.

Power has other consequences as well. It has been suggested that women, because of their predominance over household responsibilities, have almost exclusive power over the purchasing and preparation of food. So strong is this view that it has now become institutionalized in the social sciences by the term "gatekeeper." Women are the gatekeepers between the family and

society. Kurt Lewin (1943) first developed the concept in his studies of household food decisions. This term, based on research on American housewives, has been used to describe women in LDCs as well (see Caliendo 1979, p. 276).

There is increasing evidence, however, that calls for a modification of these views. While women do indeed have responsibilities for food purchasing and meal preparation, their power is greatly constrained by what might be described as "veto" power held by adult males and children (Yetley, Uptley, and Aguirre 1981, p. 100; Schafer and Bohlen 1977). The negative effects of lacking power over food within the home are reflected in the inability of African women to introduce new food practices they have learned from health care practitioners in their families diets (Scrimshaw 1974).

Finally, women lack the power to capture adequate nutrients for themselves. That is, at meal times, men are often permitted to eat first and best because women and children are considered less important. (Robson 1972, p. 88; Berg 1973). Not only is she unable to provide adequately for herself and her children in normal times, but often her diet is restricted during pregnancy because of beliefs regarding pregnancy and dietary intake (De Garine 1972, p. 148). Berg (1973, p. 47) suggests that "the notion of eating for two is a Western concept; in most Asian countries in fact, women consciously undereat during pregnancy, with the objective of a small baby and easy delivery".

Technology Constraints

Improvements in technology often lead to reductions in the time and energy required to complete household and agricultural tasks. As described above, little of this technology seems to have benefited women.

Almost no major innovations in household technology, with perhaps the exception of baby bottles, have reached the household in LDCs. Household technology historically has been slow to develop and slow to be diffused (Strasser 1980). Technology's benefits have tended to be focused on cash crop agriculture, thus largely benefiting men.

The Impact of Development on Women's Roles in Food Production and Nutrition

Observers have recently pointed out that development, in both its industrial and agricultural aspects, often has negative consequences for the human beings it involves.

The introduction of cash cropping to generate national income has adversely affected diet quality. Diet quality depends upon an adequate combination of energy sources, protein (amino acids), and vitamins and minerals. Many local diets achieve a minimally acceptable level of quality through the combination of cereal grains and pulses. The staple cereals, rice, maize, or wheat, provide up to 90% of an individual's daily caloric intake (FAO/WHO 1970). These cereals provide a cheap, concentrated form of energy as well as some protein. A combination of common grain and pulse can be nutritionally adequate without the inclusion of animal products. For example, rice and

beans each lack one or more of the essential amino acids. Eaten together, they provide a meal of high quality protein because the amino acids missing from rice are present in excess in beans.

When cash crops are introduced or are subsidized by the national government, there is a tendency for farmers to reduce their production of non-cash crops in order to grow more cash crops (Brown 1974). Because of their high yield and overall demand, cereals have been the predominate cash crop. With the increase in their production, a corresponding reduction of pulse has followed (Paulme 1960, pp. 56-63). Smith, for instance, observes that as Nigerian farmers have responded favorably to encouragement to produce cassava as a cash crop, they have also consumed larger amounts, thus lowering the quality of their diet (1970, p. 143).

A second problem with cash crops has to do with changing energy demands made on the individual. Growing sisal for sale involves heavy labor input by males. In households with males so employed, their increased energy needs reduce the amount available to other family members. Serious energy shortfalls under such circumstances have been reported by Gross and Underwood (1981, p. 738).

Other unintentional consequences of development specifically affect women. While considered less important than men in most LDCs, women traditionally have earned a degree of respect and control over their own lives through the responsiblities they take for producing food, maintaining households, and bearing offspring. Development, which has tended to emphasize male roles, has reduced many female responsibilities, but has tended to leave her status problematic (Boserup 1970). The uncertain position of women in the Third World, especially Africa, appears similar to that of females in the late stages of the western world's industrial revolution. In that instance, the public role of women was largely eliminated, and the role "housewife" was created (Oakely 1976).

Even the traditional homemaker role of women is insecure in times of change. A woman's status is often partially judged by the skill in which she prepares traditional foods. When the ingredients for such dishes begin to disappear in the process of modernization and commercialization, women can no longer easily engage in status-giving activities. An example of the decline of traditional foods and its negative impact on women is found in a recent study of rural Jordan (Basson 1981). Iranian women have relinquished control over the production of milk and eggs to commercial firms, and since these two ingredients are essential for traditional foods such as yogurt, butter, yogurt cheese, and so on, women produce less. As these foods are also associated with entertaining guests properly and providing for the needy, the inability to create these yogurt based items entails a loss of social and religious honor for the family (Basson 1981, pp. 18-21).

Summary and Conclusions

Malnutrition is a signfiicant world-wide problem, affecting hundreds of millions of people. Nutritional problems range from protein-calorie deficiencies to various anemias. The consequences of malnutrition for working capacity, mental and physical development, and health are enormously costly. Malnutrition is a product of specific societal resources and social structure.

We have provided a rudimentary outline of the societal subsystem which produces nutritional outcomes. This overview has focused heavily on the importance of women's roles in the subsystem, including female responsibilities in agricultural production, food preservation and storage, meal preparation, and meals themselves. We have also tried to demonstrate, using what little extant data that do exist, the constraints of power, time, energy, and technology affecting the performance of women's roles. Finally, we have suggested that development often deleteriously impacts on women's nutritional outcomes.

Policy Concerns

Conclusions are obvious from much of what has been described. Beginning with policy considerations, the role of women must be taken into account when instituting development programs. Among the first item of concern should be a determination of the extent and degree of women's participation in agriculture in the setting in which the programs are to be instituted. Questions should be raised and satisfactorily answered regarding the impact of the program on food and cash crop production and how a woman's ability to provide for the family is affected.

A related concern focuses on the success of the intervention itself. Programs that ignore women's roles in agriculture do so at their peril. Notable failures in agricultural development programs have been linked to ignorance of women's roles by program designers. Ritchie (1977, p. 138) reports agricultural interventions in Senegal in which Chinese experts "taught men to improve rice-growing techniques with no success in increased production." The failure was due to the fact that women, not men produce rice in Senegal.

Knowledge of women's roles and their relation to food production and nutrition is helpful in yet other ways. Knowing the relationships between women's roles and particular outcomes in the food-nutrition production subsystem and under what constraints these relationships occur, types of meaningful interventions may be more readily identified. For instance, the knowledge that a particular area's nutritional problems are confined to small children suggests that a slight reallocation of family food resources is in order. In a number of LDCs families' income levels are sufficient such that a 5% reallocation of caloric intake "can reverse or prevent serious malnutrition at the weaning age" of young children (Austin and Zeitlin 1981, p. 50). In such cases, rather than attempting to raise total family caloric intake through cash or food cropping interventions, nutrition education is more in order. In other

cases, where income is insufficient to act upon any new knowledge obtained from such programs, income interventions, involving other roles, are more appropriate.

Research Needs

It has become a cliché to end papers with calls for further research. However, in this case, our knowledge of the links between women's roles, constraints, and outcomes is so primitive, that further, more focused research must occur before more successful interventions can be undertaken.

In particular, the exact *nature* and *degree* of constraints on women's (as well as men's) roles needs further explication. Our knowledge here is rudimentary. It would be useful to know just *how* constraining these factors we have discussed are. Equally important is the need to understand *which* constraint is most limiting. If it is time, a redesign of the family division of labor is in order. This could involve reallocating some tasks and eliminating others.

Studies of household technology are also needed. We know a great deal more about the cost/benefits of agricultural technology and factors that affect its rate of diffusion. Little attention has focused on the draw-back of current food processing and meal preparation in the Third World. We have some idea about how such technologies affect food quality, but we know very little about how various technologies relate to energy and time resources. It would seem that some technologies are more efficient than others, and the more efficient methods should be identified and their wider diffusion facilitated. The need for the invention of new technologies may also become apparent.

A final need is for much of the research discussed above to focus not simply on women's roles in isolation, but rather upon the "role system" in which women's roles are embedded. Roles, by definition, do not occur alone, but rather in relation to yet other roles. Roles consist of clusters of expected behaviors, which generally are oriented towards others. In order to clarify and add greater specificity to this conceptualization of the nature of roles, social scientists rely on such concepts as complementary and reciprocal roles.

Reciprocal roles involve exchanges of goods and services between role incumbents. Husbands and children thus exchange labor for meals and other services. In Asian families, the number of roles that might be described as reciprocal are much larger than those in African families. Further investigation, however, is needed to pinpoint the exact nature of the reciprocities. Knowledge of these relationships should improve intervention.

Complementary roles involve responsibilities of two or more role encumbents which are oriented towards the same goal or function. An example here is the labor inputs of all family members toward the production of a particular cash crop. The conceptualization of women in development has often focused on women's roles as though these responsibilities could be isolated from the roles of others in the family and community. This is clearly an oversimplification. The clearest understanding of women's roles and their constraints can only occur when all family roles are considered as well. Time and

energy limitations on women currently appear quite severe, but this may turn out not to be the case at all, if the time and energy inputs of other household members are also considered.

In addition, the failure of programmatic intervention may also become clearer as role relationships are further understood. For instance, while Mother Craft Centers have been described as successes in terms of their cost effectiveness in dealing with infant and children's malnutrition, their long-run impact is less certain. Mothers who return home with well-nourished children and the knowledge of how to maintain that optimal state, experience great difficulties in implementing this recently acquired expertise because of pressures encountered from other role incumbents in the family. Family members, to which the mother is linked through role relations, effectively block changes in traditional means of child care.

In conclusion, the work required to understand women's roles in food production and nutrition has just begun. Interdisciplinary teams must now follow current speculation with further investigation.

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Role of Women in Economic Development

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The potential contribution of women to economic growth in developing countries is intertwined with what growth actually means and the processes through which it can be achieved. Economic development should eventually allow all peoples to enrich their lives. It is a process that involves economic, social and political, institutional, and structural reforms that change resources and the ability of people to handle them (Baster 1972, pp. 1-2.)

There is not a pattern or formula for growth that can be superimposed on Third World countries. Growth takes place in a variety of ways; each country seems to go about the process of growth differently. The theoretical argument concerning balanced growth versus a lead sector that jumps ahead and pulls along the other less dynamic sectors with its momentum is still unanswered. Economists do know, however, that the basic needs—nutritional, housing, health, and educational—are not necessarily provided to the poor in developing countries when growth takes place. But providing for these basic needs does not necessarily stimulate economic growth without investment activity that increases jobs, productivity, and output and offers a vehicle for continual growth.

One of the most effective ways to break the vicious circle of poverty is to provide basic education and training to girls and women. The cycle is well-known. Children cannot receive a basic education; instead, they begin to work at an early age and are never able to increase their productivity. Nutrition is poor owing to the limited food supply, so health is poor. Sickness and disease, in turn, limit output. When people have little education, they are less apt to understand and use birth control. Having a large family is a way of

providing economic security for old age when people are poor. The cycle continues. The education and training of women is one way it can be broken.

Outlook

According to 1980 statistics, approximately 2,383 million people live in developing countries: of those people, 1,307 million live in low-income and 1,075 million in middle-income countries. The GNP per person in 1980 current dollars was $850 in developing countries: low-income countries achieved $250 and middle-income countries came close to $1,580. With low-income countries achieving a 1.6 percent annual growth rate and middle-income countries reaching 2.8 percent, the decade of the seventies registered an unimpressive growth pattern for developing countries (The International Bank 1981, p. 5). An optimistic outlook in the early seventies changed to an unencouraging one near the end of the decade. Wave-like increases in oil prices disrupted non-oil producing countries, continual increases in the price of food and other goods purchased abroad increased import costs, and the inflation/recession problems of industrialized nations coupled with their slowed growth rate curtailed overseas markets for the exports of developing countries.

Most forecasts conclude that the disappointing growth pattern of the late seventies will be with us for the next two decades. The growth rate expected for developing countries during the eighties is between 2.2 and 3.3 percent according to the *World Development Report 1981* (p. 5). The Overseas Development Council, World Bank, Organization for Economic Cooperation and Development, and Brandt Commission agree that the next two decades will be difficult for both the "have" and "have not" countries. Industrialized countries face the rest of the century with a need for resources that are significantly more expensive than in the past. This will curtail their growth. Economic conditions in the industrialized countries spill over to the developing world. Experts contend that the Third World cannot expect the amount of investment funds for capital formation previously recorded (Burki 1981, pp. 20-24). But more than this, the increased prices of oil and food will have a severe effect on the growth of developing countries owing to their surge in population and lack of alternative sources of energy. The growth strategy must be more and better human investment: that is to say, more effective use of the resources they have available (Burki 1981, p. 24). This begins to provide the background for the topic of this paper, the role of women in international development.

Human Development

During the next two decades developing countries will be forced to concentrate on human investment which will add the greatest returns to the economy. The correlation between the status and orientation of women and the development and use of a country's workforce has been documented (Ginzberg 1971, pp. 9-10). Expenditures on educational projects in which women take part give visible results in terms of productivity, income,

employment, health, and fertility. This leads to a change in the traditional roles of women which comes about only if absolutely necessary for survival or after significant effort on the part of government. The realization by governments that investment focusing on girls and women gives high marginal returns will begin to change the allocation of development moneys.

The large contribution of women and children to household production and income is necessary for family survival. The poorer the economy, the greater the work load of women (Ginzsberg 1971, p. 87). Household studies indicate that women and children contribute over half of the total family production. Girls, particularly, carry large family work loads (Safelios-Rothschild 1980, pp. 44-46). In rural families, women cultivate the crops that provide food for the family, tend the animals, as well as care for a small plot for a cash crop. Marketing cash crops and other activities of women often provide necessities for the family. However, as the men receive basic education and vocational training and are able to specialize, their productivity increases over the women who are left behind to care for the family in the traditional ways (Boserup 1970, pp. 213-214).

A host of studies verify the entrepreneurial skills of women in developing countries. Liberian women take the produce from a small plot of land not needed for family food and sell it for a tidy profit. Gambian women, seeing the tourists like tie-dye cloth, set up a tourist tie-dye industry. Market women are examples of ingenious salesmanship. However, these examples are somewhat isolated from the process of economic growth. What is needed is a basic education for women who are a major part of the labor force in developing countries. Unless the productivity of women as a whole increases, there is little hope of any economic growth of merit taking place.

The value of resources, investment, and technological know-how has to be incorporated into the decision-making of the household. The wisdom of taking a small surplus and spending it on those things that lead to human investment has to be fused into a way of life before a household can participate in economic growth. This orientation is not automatically assimilated when women are not included because, in addition to being a large part of the labor force, women are responsible for raising the children and managing the household.

Education of girls has favorable effects on family health and fertility as well as contributing to an increase in productivity and income. Fundamental principles of health—sanitation, cleanliness, and immunization—can control numerous endemic medical problems. Education, by offering alternatives to immediate marriage and by providing understanding about birth control methods, can eventually lower fertility rates.

Research Directions

The essential ingredients for economic development and their interrelationship are not clear cut; consequently, the alternative roles women can play are also elusive. Research that will pinpoint the benefits of investment centered

on women is needed. First, longitudinal studies tracing the economic changes that occur in households as women receive basic education and training are essential. For example, we need to document the many ways these opportunities enhance the productivity of women in the labor market. Studies are needed to determine the personal and household income differences emerging over time between educated and uneducated women. Comparisons of the fertility rate changes that occur when women are able to attend schools also have important economic implications. Differences in the number of well children and their length of life and, more importantly, the quality of life of their children are vital demographic signs for economists. The economic impact of different types of educational programs and training on women is also vital.

Secondly, opportunities for women in the new industries being introduced in developing countries must be recognized immediately and women must be trained in those areas. This is important because it is far easier to establish a foothold in a new industry, i.e., computers, than to break into an established industry.

Thirdly, countries' laws must be investigated and continually reviewed in order to identify those that hamper all members, particularly women, from fully participating in the process of economic growth. Problems pertaining to equal opportunities in terms of employment, inheritance, especially of land, must be recognized, and the efficacy of alternative legislation determined.

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Family Women, Food, and Nutrition

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First I would like to thank Pamela Horne for giving me the opportunity to participate in this interdisciplinary panel, for I expect to learn much from my fellows on the panel and from you, the participants, in front of us.

I think it only fair to tell you a bit about myself, what I have been doing in my research and my relation to the topic at hand. I was educated in geography at Berkeley during the time that Carl Sauer built his school of cultural historical geography. Most of my fellow students were veterans, back from the wars in the Pacific and Europe. Kroeber was dead but we all took courses with Lowie and Heizer in Anthropology, Herbert Mason and Stebbins in Botany and Genetics, and Sluiter and Kantorowicz in History. We aimed at understanding the personalities of cultures not our own. The focus was on Latin America; the examples taken from substantive, empirical research conducted in that cultural realm. Still we recognized that it was for convenience and taste only, for other parts of the world would have yielded the same riches. We gloried in the rich diversity the world had to offer.

After a hiatus of 10 years, I returned to do graduate work at the University of Wisconsin, Madison, where historical geography under Clark, plant geography under Sauer and Iltis and plant ecology under Curtis and Cottam fleshed out my methodological background. My dissertation field work was played out in the Caribbean and I have returned to my islands every few years for long and short field sessions for 20 years.

My research has focused on plants. I call myself a plant geographer. I am interested in vegetation as a landscape feature, the dominant feature in non-urban settings. I aim at understanding the processes for which vegetated landscapes are the outward and visible sign. These processes include those of

the geo- and bio-systems operating in these places and the human, social-economic systems also operating there. Experience has demonstrated the truism that peoples' behaviors largely determine vegetated landscapes. I am also interested in intimate people-plant relations: the domestication of plants by present day societies; the use of plants as medicine; and the process by which societies have constituted culturally significant floras by carting useful things around and wiping out others.

Where does this leave women in development? I have not focused on women's role or women's problems. I settled on vegetation or plant geographical problems to solve. What have I learned? I learned that men *and* women were involved, and while there were significant sexual divisions of labor, no study was adequately undertaken without considering both men and women as actors and decision makers. But this was not by methodological design. I was interested in the land and who was manipulating it. Who owned, tilled, filled, made land use decisions, be they immediately on the scene *within* the ecosystem defined by place or *extra territorial* as by the French National Assembly or President Reagan's Caribbean policy.

What I have to say today then is reflective, an effort to make sense out of what I see happening in the Caribbean and West Africa and read about in the Pacific. What I have seen is change, dramatic change, and the roles of women seem more sharply drawn to me now than they were earlier on. My concern with the development process as an abstraction gradually changed into involvement with the process.

We scientists burst on the developing countries after World War II to examine, pummel and point with horror and alarm at such disparity between the lives we were living and those of the benighted in the underdeveloped world. World War I and its aftermath had taught us that we couldn't make the world safe for democracy, but we jolly well could eliminate poverty, hunger, and poor health. All problems would be solved and the walls of underdevelopment would quickly tumble. We have done none of these. I began my field work in the early 60's. Some of you will remember that the First Development Decade[1] was getting off the ground and confident modernization theories were being developed by sociologists, political scientists and, to our shame, even some geographers. Development was generally viewed as both expansion and structural change but more often than not some single yardstick such as rise in Gross Domestic Product was demonstration enough that development was taking place. In fact, I submit that the idea of development as growth is the first of four ways of thinking about development. Development in the present context of this symposium can be thought of 1) as growth; 2) as modernization; 3) as increasing welfare and quality of life; and lastly, 4) as increasing self-reliance and independence of

[1]In March, 1961, President Kennedy called on the nation to undertake a "Decade of Development, on which will depend, substantially, the kind of world in which we and our children shall live." To carry out this purpose, Congress established the Agency for International Development (AID) in Sept., 1961, to unify existing aid efforts and endow them with a new focus.

action. The result? Unsought consequences of simplistic remedies were set in train. Hypotheses were tested. Formal theory was set to practical problems, but the level of explained variance was rather low.

If we are concerned with theory, and I believe I can get agreement on that score from social scientists as well as biological and physical scientists, then local or cultural particularity becomes noise. We test various hypotheses such as land-use patterns in terms of specific economic models. The results may be sufficiently consistent as to be not discouraging. The explanation may be obvious but it does let us establish the obvious in order to avoid the sin of cultural particularism (Brookfield 1973). If on the other hand, the investigator is interested in understanding the whole of the social fabric and its spatial patterning, the hypothesis helps by showing that there is an underlying regularity, but leaves us to recognize that there is lots left over to explain.

What is the nature of our problem? Fundamentally, how we can analyze change in an alien society and by implication compare one society with another so that we can identify the role of women in that society.

There are at least three perspectives in which the examination can take place:

1) *The development view*—Development is associated with the idea of progress, an outgrowth or rather concomitant of growth, especially national rates of economic growth. Increased wealth, the result of growth, can then be redistributed so all are better off. If development is economic growth then underdevelopment is seen as extreme poverty or lack of growth; therefore, very poor countries are underdeveloped. Hence, we pushed for economic development. This began the great push to incorporate subsistence-oriented societies into larger commercial societies articulated into regional or international economic networks (Eicher and Witt 1964; Wharton 1970). Indeed, subsistence modes were, if not despised, at least thought somewhat morally tainted.

It is not surprising that this was the approach of the economist, for they were our logical positivists par excellence and others jumped on their bandwagon. It began to be recognized that imposing our values and views on a society may be violating the reality of the society under investigation. The economist had his economic man so if there were departures, they were just local aberrations. Sociologists and geographers who felt some need to check out theory against the real world began to be uncomfortable with the low level of explained variance. We then turned to

2) *The view from within*—the humanistic, ideographic. Do we examine problems of people-land relations from the standards of truth and falsity within the society? Are ethno-taxonomies really valid conceptual systems and must we use these to present a valid assessment or explanation of observed societal phenomena? That is, there is no rational comparison to be made between societies since their values differ, which is actually a way of saying there is no general theory (Buttimer 1976; Duncan 1980; Ralph 1981).

3) *A comparative view*—essentially ecological or nomothetic. Can we use our own society as a normative sounding board and determine departures from it to provide a comparative scale? That is, can we use the concepts of general systems theory, especially the ecosystem theory? Can we use the postulate that changes introduced into the system may be adaptive or maladaptive and that the consequences of change must be considered as both society specific and variable over space-time? Using the concept that societies possess adaptive systems to survive, our major diagnostic variable is technology (Waddell 1972).

I propose that the latter two views will provide the understandings which make it possible for us to predict the value of change, through modernization in a society as carried on over three decades by ourselves and others.

Over two generations of geographers concerned with developing countries have been intimately involved with poverty and underdevelopment. We looked at subsistence economies being assaulted with modernization. As a group, we found it necessary for involvement in public issues. Our earliest and most radical geographers came from this group of expatriates studying the Third World. Others less radical pointed out that the disbenefits of subsistence economies were often derived from our perspectives. "The assumption in our economic system is that man's wants are great and his means limited. For many primitive peoples, however, wants are limited and means are great. Or... market economies are based on inadequacies and deprivations while subsistence economies are based on adequacy and dispensation" (Nietschmann 1979:3).

There were those who felt that development as economic growth was really too simplistic and that change was not possible in only one sector but must proceed in all sectors of society (Johnston 1970). Modernization cuts across the whole of the society and leads to costs to the changing society, such as in the loss of autonomy. The concept of modernization was generally postulated as a process of transition from a traditional society toward one characterized by such systemic features as: high GNP and per capita income; self-sustaining growth; high mass-consumption; and a well-developed and diverse sectoral structure (Thornton 1973). Modernization theory posits that the most advanced and modern parts of the world are spreading ideas and technology which will lead to the "improvement" of the rest of the world. Countries develop by modernization and thereby become more like the advanced countries (DeSouza and Porter 1974). As instruments of culture change, development agents are taught to introduce new ideas and techniques. "One of the happier outcomes of the last war has been the acceptance... that the underdeveloped countries of the world should be helped toward a fuller life by those which are either highly or semi-developed" (Phillips 1961).

The effect of modernization theory on the thought processes of development officers may be pernicious:

> "The idea of development as modernization produces a parallel corresponding idea of underdevelopment as backwardness or traditionalism.

> Those countries and areas that are least similar to the advanced, modern countries are viewed as backward or underdeveloped. Those countries which are modifying to absorb the new ideas, values and technologies, are described as developing or modernizing. Such a view of underdevelopment contains all the culture-bound thinking of modernization theory. It implies that the more developed countries are superior to the less developed" (Bromley & Bromley 1982:14).

While criticism of this approach began in the early 1970's (Sahlins 1968; Mishan 1969; and Brookfield 1973), a belief or faith persists that, with technology transfer, people will move out of traditional ways and modernization will somehow ensue. This belief is bolstered by evidence gained from growth indicators at a national scale: GNP and per capita income. Time series show constant or accelerating rates of growth in such indices. However, often little count has been taken of the condition of people in rural areas—people who passed from tribalism to peasantry while labeled transitional. The transitional stage may be a permanent step when the complete transition is not made. As a result, "development" creates a condition of structural underdevelopment. The development process stimulated from without may lead to cul-de-sacs (Howlett 1973). Indeed, involvements designed to increase income-producing strategies in rural areas may lead to "irreversible events that increasingly bind the local community to the outside world and seriously restrict its alternative choices of action" (Grossman 1981).

I want to look at three cases: one from the Pacific and two from the Caribbean. In the first case, we look at the consequences of intensification of agricultural production. The adaptive strategy of subsistence (non-market goods) has been either pushed to territories of lower productivity or higher cost, such as among the Barabuna of New Guinea. The diet staple in New Guinea is the sweet potato. The agricultural system is that form of horticulture known as shifting cultivation (swidden). Various local ecosystems were developed before European contact. One group used sweet potatoes both for human food and as food for pigs, which were rare and thus kept in fenced enclosures. This group was introduced by outside "advisors" to cash coffee farming and cattle raising. The advisors also identified which lands were "best" for coffee. These lands, formerly capable of more than one harvest per year by the system of polyculture and multiple cropping, were then tied up in an annual crop. The sweet potato gardens had been pushed to the extremity of the settlement holdings. Men were involved in coffee production so subsistence farming had become low status; when not producing coffee, the men gambled and drank beer. The women traveled farther (time constant) distances to get to the gardens. Their labor yielded less because soil fertility was lower and the time consumed in traveling to the gardens was unproductive. The attempt to graft coffee on a subsistence base was only successful in cash flow terms. A large investment by people was wasted, yielding minimal productivity returns and creating dependent, rural slums. Coffee production in a region was a macro-level problem. Most was produced for export which provided for some modification of the nation's balance of trade. But the

effects of coffee innovation and the reasons for variable response to economic incentives were micro-level. Inquiries demanding the collection this kind of of data were never put into the macro-scale study.

Let me quote:

> Before we planted gardens at all times of the year. Now Bisnis has arrived, and we think only of bisnis...
>
> Before we thought only of gardens, of building strong garden fences. Now, this time, every one plays cards, forgets about fences, which rot, drinks beer all the time, and is lazy; people do not care for gardens either. They are bored with gardening. If they are hungry, it is their own fault (Grossman 1981, p. 232).

The spread of cash cropping resulted in people neglecting their food gardens. Good coffee seasons brought a reliance on cash cropping and the women were reluctant to return to traditional patterns, and they lost in productivity and status.

My second case comes from the western Caribbean. The Indians of the Miskito Coast of Nicaragua share and sell their turtle catch. In 1969, a foreign-owned turtle company began the buying and freezing of turtle meat for export. Meat was bought in the villages and turtle camps. Since the demand was unlimited and there was a guaranteed market with good prices, the coastal turtlemen increased their fishing. In the first half of 1971, there was an increase of 228% over a like 1969 period. Sales to the outside rose by 1500%; sales within the community declined 14%; more turtles were caught; more were sold, resulting in less meat to eat within the village (Nietschmann 1973). In earlier times some of every catch was dried for the wet season; in 1971 Nietschmann found few families stored meat, or, if they did, relatives might beg a piece. The consequences of dependencies created by external markets, especially when tied to a declining resource, is a trip up an ecological blind alley. As families increasingly participate in cash market activities involving not only surplus resources and labor above subsistence, but also taking labor and resources *from* subsistence, they increase "the degree to which they have to disengage from horizontal social relationships kept viable through reciprocity. A Miskito woman portrayed this relationship by observing, 'Have to work. First time family give, not now, have to buy.'" (Nietschmann 1979). The young adults in 1971 generally had smaller subsistence plots and spent more time acquiring resources for sale. Their livelihood strategy is both more focused, simplified, and vulnerable than that of their parents.

My third case is taken from my studies of dooryard gardens. When I first began my vegetation studies in the Caribbean, I needed a term which included planted elements, spontaneous cared for elements, and tolerated wild elements; hence, the *dooryard garden*. Domestic animals had their place—geese, chickens, rabbits, cattle. Diffuse and formal geometries characterized these dooryard gardens. (Kimber 1966).

Later on, I focused on these dooryard gardens as my object of study. (Kimber 1973). I will not bore you with the details of management styles, analysis of function, annual crop calendars and the like, but I will give you

two items of information:

1) Men and women both worked in these gardens, one or the other managing, the other acting as helper.

2) The proportion of the diet of the "operators" produced by the dooryard garden was variable between gardens and for one dooryard garden through time. In no case was all the food produced. The majority of the caloric content of the diet came out of provisions grounds, market gardens or from store-bought produce but much of the daily vitamin and mineral requirements were supplied out of the dooryard gardens either in catch foods (foods picked up anytime of day by children and adults) or in the meals prepared from the garden products.

Out of a survey of 80 gardens in Puerto Rico, 75% (60) were "managed" by women. When I returned to Puerto Rico, six years after my initial study, I found some gardens much enlarged—supplying much more of the food stuffs required by the family because the family was out of work. The tax incentive period was over for the industrial and manufacturing plants established under "Operation Bootstrap" so industry had moved on to the neighboring Dominican Republic. The adults of the household, therefore, were unemployed. The woman of the house took on the job of increasing the size of the dooryard garden while her husband and sons played dominos.

In Martinique, I carefully studied three dooryard gardens. The first was managed by a retired forester whose wife lived with him. His large family of children were gone. The second was managed by a widow whose "shiftless" son (her word, not mine) lived with her. Third was a new dooryard garden cut out of the bush by a retired couple who had been given usifruct of a plot on an abandoned cotton plantation for their retirement income. Out of the three, none had had the same complement of plants and animals (Kimber 1966).

Ten years later, I revisited these Martinique gardens. The first was managed by the middle daughter of the forester; the second had passed into second growth vegetation; and the third was replaced by a limestone quarry. The one existing garden was different from the one I had mapped earlier. Thus very few of these land units were static with respect to either land use or operators cultivating them.

In the New Guinea example, the women are walking farther, producing less, and occupying a lower status position than before development activities. Among the Miskito, the women see reciprocal exchange being replaced by working for cash and have lost a sense of group solidarity. In the island world, the subsistence burden varies inversely to the externally dominated economy. Development has been a mixed blessing.

As a result of my own professional career, I see two perspectives opening before me. One is manipulative—the desire to "do something" which makes actors of us. Actors have spent time in attempting the transfer of technology to recipients among the third world, i.e., they are innovators of change, and

are, therefore, goal or mission-oriented.

The second perspective involves contemplative search for understanding of the change process and what it does to people and societies. From this understanding, one can generalize about change and make causal statements about events leading to predictive models of human behavior. The two roles may be embodied in the same person, but not at the same time and rarely in the same place. I now realize that motives and objectives change. Each time an investigator, like myself, returns to Martinique or Puerto Rico a different person to a different place.

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Title XII and Women in Development at U.S. Universities

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I teach at Texas Tech and want to talk today about our faculty-staff group on Women in International Development; and how its evolution and progress reflect larger ideological and administrative issues and problems in the women in development movement, as articulated in Title XII programs.

To begin with, I will try to fill you in briefly on what an interest in women in development may mean in schools involved in the Title XII concept.

Title XII was instituted by Congress in 1973, as a consequence of the Percy Amendment to the Foreign Assistance Act.

Five relevant mandates emanate directly or indirectly from that amendment:

1) agricultural production by the poor of the Third World should receive special attention in development programs;
2) American universities should participate in these efforts, in particular, universities with agricultural schools or programs;
3) women in developing societies should receive particular attention, as they are food producers and consumers;
4) social science (the study of the culture of a geographic area) is integral to increasing access to food and food producing capacity;
5) American university women may have a special sensitivity to the problems of women in the Third World, in addition to specialized training, and therefore should be incorporated into international development programs.

Title XII demands a lot, perhaps some of it contradictory. To enhance the achievement of these diverse goals, it was thought necessary to increase skill levels of university personnel and thus improve the quality of their participation in development activities. Thus, Title XII provided for strengthening funds, totalling $205 million in 1981, for universities that have a start in agricultural programs. These are administered by the Agency for International Development.

Texas Tech has both an agriculture school and a well-respected center for arid land studies. The latter, the International Center for Arid and Semi-Arid Land Studies (I.C.A.S.A.L.S.), administers our Title XII strengthening grant. In 1980, a call went out for expression of interest in women in developing countries. A coterie of 12 to 15 women, primarily from the social sciences and the College of Home Economics, met, and at the request of Title XII administrators, organized a regional conference to educate others on the needs of women in developing areas and how international aid has influenced them negatively and positively.

The conference was a great success in terms of level of regional participation, quality of speakers, and the amount of provocative discussion carried on about women in developing societies. And, we accomplished our first group goal, to stage a conference, requiring a lot of work and organization. The success of this effort may have blinded us, however, to two problems that have plagued our subsequent activiites:

a) most members of our W.I.D. group were and are interested in substantive issues related to women in the Third World, and are interested in further international field experience; but left the conference still befuddled about the complex bureaucratic structure and procedures of Title XII, as administered by A.I.D., and expressed at the level of universities and regional consortia.

b) The excellent communication among sectors of our university interested in international development, that pooling of skills, expertise, and the unity manifested in conference participation, would not continue in the absence of intense networking on the part of our W.I.D. group members.

After the conference, our group remained together, intending to proceed on four fronts: 1) completing conference proceedings, which we've finished; 2) language training through Title XII funded courses in French and Spanish, which most of us have attended for several semesters now; 3) writing background papers on women in Pakistan and Botswana, for the Consortium on International Development (C.I.D.), a 10-university conference that does development program planning, and to which Tech belongs; and 4) and most ambitiously, writing a project proposal for women in Botswana, to be incorporated into C.I.D.'s larger development project proposed for Botswana, then being prepared, or to be submitted to funding sources, including A.I.D., ourselves.

Needless to say, the latter effort, the proposal, was the most attractive to many of our W.I.D. group members. And, our efforts in this regard continued through much of the last year. Two major problems emerged, however, which, on reflection, seem to be intrinsic to Title XII projects. The first was the constant subordination of our definitions of development and women's roles to larger A.I.D. and C.I.D. frameworks and proposals. In other words, the agency, the consortium, our university, defined aspects of our problem, rather than the other way around; this is a procedural subordination, to proposal calls, timetables, and so forth, that finally becomes substantive. To wit, C.I.D. did not get the Botswana contract from A.I.D., eliminating a major and the most promising source of funding for our project.

Second, we had not learned the fine art of working together as representatives of at least six different disciplines, as we shared neither a full conceptual framework for understanding development, though we shared some ideas; nor did we have in common an understanding or history of scholarship on the country in question, Botswana. Again, our efforts to let knowledge about women as actors in and victims of development define the problem was frustrated by the administrative problem of communicating among very differently trained academics.

Given these frustrations, it is not surprising that some members lost interest in proposal planning. It is worth noting also that, as on many campuses with W.I.D. groups, our members are busy with many other activities regarding women; and many are assistant professors, experiencing pressing professional demands, that must take precedence over unpromising activities.

With this in mind, we met to consider our individual goals in reference to proposal writing. We discovered a nearly universal feeling: that individual training and knowledge about women in development did not easily fit into group experience, at Tech, in C.I.D., or, as far as we could discern, in A.I.D. And, members increasingly blamed themselves for insufficient training, in language, area knowledge, and especially, in technical knowledge about agriculture. Thus, our proposal writing experience was becoming destructive of self-image—hardly what Title XII calls for in suggesting the incorporation of university women into development programs.

Our problem was, then, as I indicated, administrative: how to channel individual skills into a larger network of professional academics and policymakers. And, C.I.D. had recommended, through its Women in Development project headed by Kate Cloud, to avoid the rush into project planning until other, lower-level initiatives are complete, including full identification of members' skills and their fit in the larger networks to which a university W.I.D. group is likely to belong. However, I would contend that our apparent naivete and failure to meet administrative challenges must be understood in terms of larger contradictions between Title XII and university programs in international development.

Towards the end of discussing those contradictions, let me reiterate that our group members had fairly specific research interests related to women in developing areas. It is a skilled group in academic terms and in international experience, despite our occasional, unwarranted feelings to the contrary. And, we had come together, again, with a substantive focus: women in Third World countries and their participation in the development dynamic. This focus, we discovered, was not intrinsically significant to the Title XII bureaucracy, but was part of a larger set of project and procedural goals—goals that, in fact, confounded some of our scholarly findings and interests. Indeed, our intuitive grasp of the problem was reinforced by reports we heard from a variety of sources that women's issues must be "mainstreamed" into Title XII projects, to counter agency and host country resistance to the notion that women deserved special attention in development planning.

Our group decided to reassess our plans. And to do so by asking the question which I have come to see as central to W.I.D. involvement at a Title XII university: Are we interested in women in international development? Or are we interested in the various funding opportunities related to Women in Development available because of Title XII? These are not always mutually exclusive interests, but do provide dramatically different taking-off points for further discussion of university-level W.I.D. programs.

We have not answered this question yet, but have begun to build a program around information gathering and skills identification. We are trying to learn more about international programs on campus and throughout C.I.D. Our networking on campus was never strong, we discovered, as I mentioned; not one of our members have been consulted on development projects being designed at the university, despite the involvement of those project designers in our conference. The same is true for C.I.D.

We are also forming several projects with immediate goals that allow our members' skills to be used directly. These require only minimal Title XII funding from the Strengthening Grant. For example, we are creating a training module for Tech students from developing countries, in response to their perceived professional needs. Again, we are trying to learn about each other, how we think about development, what sorts of phenomena our disciplines and scholarly experiences emphasize.

In conclusion, let's return to the more general level of the Women in Development movement and the Title XII program. In my experience, I have heard a number of complaints that are serious and may finally mean major changes in the Title XII concept. Particular conflicts addressed include: 1) those between traditional high tech, capital-intensive agricultural projects and the Title XII mandate to serve the poor, including women; 2) conflicts between area specialists, mostly social scientists, and those who see the developing world in terms of crop areas, technologies, etc.; 3) related ambiguities among disciplines, e.g., every Title XII project must have a social scientist in the planning stages, but does that include an expert in consumer

education, say, whose skills fit the work, but who wears the label of home economist? and 4) finally, conflicts among male and female economic sectors in various countries and general hostility towards the Women in Development movement in the international development community.

Our problems have reflected several of these conflicts. These problems are crystallized, I think, in another kind of conflict that I have heard less about in Women in Development circles: that between serving women in the Third World, and serving our own needs as First World women--generally low-status, professionally young, entering universities at a time of generally declining career opportunities.

From my first exposure to Title XII, it has been presented to me as a career-enhancing program. At a conference at the University of Maine for Northeastern universities with Title XII involvement, one woman academic introduced herself in terms of her kinship with others there—also, in her words, interested in upward mobility through Title XII. I appreciated this disarming and frank assertion, because I have come to think that seeing our career interests in Title XII, admitting it openly, is terribly important. For it is not the same, sometimes not compatible with, helping Third World women.

Some other ways this has been asserted at W.I.D. activities has been in suggesting that women's liberation in the U.S. cannot be meaningfully related to Third World women's needs. And, by asking if, because we are all women, our interests are indeed common? More often I have heard the commonality of women's experiences across national boundaries described and exalted. I happen to agree, as a sociologist, that there are important commonalities across the worlds of development, but they are least salient in so far as professional academic women in the U.S. and poor, landless Third World women are concerned. And, there are some Title XII activities, indeed some that have successfully incorporated U.S. academic women, that probably contribute to land alienation in the Third World, and in this sense hurt women as producers or members of producing families.

It is ironic that W.I.D. is the product of our rather late understanding in U.S. foreign policy that education, birth control, even capital input, aren't enough to develop a country if people lack the means to feed themselves. Title XII is, then, in the history of foreign aid, a progressive movement. So is women's presence in academic programs on campus. The two are sometimes related, and then in a complex way, that calls for all the self-consciousness that Women in Development groups at every bureaucratic level can muster.