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FEMALES, FARMING AND FOOD: RURAL DEVELOPMENT AND WOMEN'S PARTICIPATION  
IN AGRICULTURAL PRODUCTION SYSTEMS

Rae Lesser Blumberg  
University of California, San Diego

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## TABLE OF CONTENTS

I. INTRODUCTION	p. 1
A. Development with Equity	2
B. Food and the Fear of Famine	5
C. Women, the True "Invisible Hand" in the World Food System	7
II. THE CULTIVATION CRUNCH	11
A. The Rich Get Tractors and the Poor Get Going	12
B. Manipulating Fertility, Freedom of Movement, Family and Female Labor for Survival	15
1. Fertility	15
2. Migration	16
3. Household/Family Patterns	17
4. Sex Division of Labor and Resources	18
III. WOMEN, FARM WORK AND FARM WEALTH AROUND THE WORLD	19
A. Africa	21
B. Asia	31
C. Latin America	36
D. Middle East	41
IV. SEX DIVISION OF LABOR AND SEX DIVISION OF RESOURCES IN RURAL LIFE	43
A. Sex Division of Labor in the Countryside: Shortchanging Women's Work by Statistics and Stereotypes	43
B. Sex Division of Resources in the Countryside: Questions, Not Answers, about Women's Relative Economic Power	47
V. EVOLUTIONARY OVERVIEW: WOMEN, PRODUCTION AND PROPERTY	49a
A. Foraging Societies	51
B. Horticultural Societies	53
C. Agrarian Societies	55
VI. CONCLUSIONS AND POLICY RECOMMENDATIONS	58a
A. Recognizing Rural Women's Economic Roles and Resources	58a
B. Preserving and/or Enhancing Rural Women's Economic Roles and Resources	59

FOOTNOTES	P. 64
REFERENCES	69
APPENDIX	79

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I. INTRODUCTION

During the decade of the 1970s, two issues have developed from dawning awareness to dominant concerns among the "mainline" international development community: (a) "development with equity," and (b) food. In this paper, I suggest that it is poor rural women who constitute the hitherto largely invisible but crucial common element - indeed, perhaps the ultimate determinant of success or failure - in guaranteeing both (a) and (b) to the Third World.

In order to make this argument, it will be necessary to examine the present - and past - conditions and contributions of rural women in comparison with their menfolk. We shall do so along three axes, specifically, their relative position as (1) producers, (2) property-controllers and (3) people. The first involves the sex division of labor in the group's main economic pursuits. The second involves the sex division of resources, i.e., each sex's relative control over the means and fruits of production. The third involves the sex division of non-economic life opportunities and well-being. In previous work on a cross-societal paradigm of sex stratification (Blumberg, 1974, 1978, 1979), I have suggested that it is factor (2) above, women's relative economic power, that is the main determinant of their relative equality as (3), people, in a wide variety of life options and aspects of well-being. Work (factor (1) above), in and of itself, does not seem to enhance women's relative equality in "life options"<sup>1</sup> - although it does seem to be a prerequisite in most societies to women's acquisition of substantial economic power.

It was Ester Boserup (1970) who first suggested that the processes of Third

World "development" (i.e., the combination of unplanned macro-economic trends in the world political economy and planned development policies in various Third World countries) frequently have led to the greater economic marginalization of women. In terms of the three factors listed above, such "development" often has had the general consequences of (1) increasing rural women's work load; while (2) decreasing their resource base (both absolutely and relative to their men-folk), and, consequently, (3) decreasing their well-being and opportunities as people. In turn, it will be argued, what happens to poor rural women profoundly affects both their country's agricultural system, and its general level of well-being.

Organizationally, after a brief overview of the development-with-equity and food issues, the argument is developed in five parts. First, we examine how the overarching trends in the world economy and Third World development policies have affected the lives of the rural poor. Second, drawing largely on case studies, we explore how rural "development" has impacted on females' roles and resources in farming and food systems in Africa, Asia, Latin America and the Middle East. Third, we assess the discrepancy between the portrait of women in agriculture painted by the case studies vs. that portrayed in national and international statistics. Fourth, we turn to human evolutionary history for a baseline against which to evaluate the contemporary picture. Finally, the last section of the paper presents policy-relevant suggestions as to how female contribution to farming and food systems may be (a) recognized, (b) preserved where threatened, and (c) enhanced for the purposes of achieving both "development with equity" and an equitable supply of food for the people of the Third World.

#### A. Development with Equity

The emergence of the development-with-equity issue has signaled the gradual demise of the "modernization" approach to development. That focus stressed capital-intensive projects, used GNP growth as the measure and goal of Third

World advance, and assumed that development could be fostered almost without reference to the underlying social structure of the country or its position in the world economy. In contrast, the development-with-equity approach speaks to the question of "Development for whom?" It stresses the distribution of the economic pie, rather than its mere growth. Little more than a decade ago, development-with-equity was an isolated cry from the "periphery" (both the countries on the periphery of the world economy and the iconoclastic or radical among the development "community"). Today it has been taken up in many quarters - even among the ranking development planners in the core countries themselves. It involves both an internal and an external angle.

Core country development experts tend to be more sensitive to the internal ramifications of the development-with-equity issue, since evidence has been accumulating steadily that the combination of capital-intensive development projects and the seemingly inexorable trends in the world economy have been contributing to an increasing gap between the haves and have-nots within Third World countries. For the limited group of beneficiaries, the world economy-oriented pockets of development have brought the shiny imported toys of transferred high technology and luxury-oriented consumer goods. For the many, the other side of the coin is labor displacement in the countryside and an ever-growing shortfall of jobs as urban industrialization fails to generate sufficient employment. One result of the changing relations of production is a swelling tide of temporary and permanent migration, as people search for subsistence. Another result is soaring rates of landlessness and impoverishment, as the conversion to wage labor and the increasing concentration of land holdings proceed apace.

The chilling prospects implied by [these trends] can be more fully appreciated in light of recent estimates for Asia and Latin America that indicate that rural households below the "small farmer" category represent a majority of the labor force (Esmen, 1978: Tables 1-4). In Asia, the percentage of landless rural households ranges from 25 percent in Bangladesh to 41 percent

in Java; marginal cultivators from 13 percent in India to 45 percent in Bangladesh. Combined landlessness and near-landlessness exceeds 75 percent in Java, Bangladesh and the Philippines. In Latin America the proportions of landlessness and near-landlessness ranges from 85 percent in Bolivia and Guatemala to 55 percent in Costa Rica. In Mexico nearly 30 percent of the rural households are headed by landless agricultural workers; in Brazil nearly half of the rural households are effectively landless. (Stokes, et al., 1979:65)

Current international statistics classify fully 800 million of the rural poor as "destitute" (FAO/WCARRD/INF.3, 1979:i) and their numbers are expected to increase rapidly (the IBRD, 1977, estimates that by the year 2000 about 1.1 billion people in the non-communist developing countries will be suffering from absolute poverty). And many statistics document the widespread erosion of real income:

A study of rural areas in the Philippines indicates that real wages have decreased 50 percent since 1957 (Kahn, 1977); in Mexico, de Alcantara (1976) estimates that real wages declined by more than 15 percent between 1950-1970; other studies of West Malaysia (Lee, 1976) and Egypt (Radwan, 197 ) indicate a similar increase in rural poverty. (Stokes, et al., 1979:65)

Recognition of these facts, and the potential for massive instability that they could engender, have prompted a new concern with development projects aimed at filling "basic needs" (e.g., AID's "New Directions" approach).

But the development-with-equity issue has an external component as well. In fact, many advocates of this position claim that the negative tendencies within countries documented above are the result of the growing unfavorableness of the position of the non-oil exporting Third World countries vis-à-vis the developed nations, especially the industrial capitalist ones. Thus, the external emphasis of the development-with-equity issue is symbolized by the call for a New International Economic Order. As the "second decade of development" draws to a close, the gap between rich and poor countries has been widening unrelentingly. Most of the non-oil exporting developing countries remain suppliers of a limited range of primary export commodities (most often agricultural) under/unfavorable terms of trade. This "unequal exchange"/includes the fact that prices for the developing world's primary exports have been

(Emmanuel, 1972)

falling farther and farther behind those charged by the core countries for manufactured goods. Less well known is that this unequal exchange extends to the fact that prices received by Third World countries have also been falling farther and farther behind those charged for the cereal grains an increasing number of these lands have been forced to import from the U.S., and, to a lesser extent, Canada (Omvedt, 1975). This brings us to the matter of the world's growing food crisis, which also proves to have an external and an internal aspect.

#### B. Food and the Fear of Famine

The external aspect of the food crisis is represented by the fact that more and more Third World nations are becoming net importers of food (a fact made doubly ironic by the status of most of these lands as agricultural countries), increasingly dependent on the world's No. 1 exporter of food, the United States. It has been estimated that the U.S. plus Canada account for about 90 percent of the world's export cereal grains (principally wheat), and that some six multinational corporations account for roughly 90 percent of that 90 percent (Cox, 1974; three of these MNCs - Continental, Cargill and Cook - are U.S.-based). In short, the U. S. controls more of the world food economy than the OPEC states control of the world petroleum economy. U. S. agriculture is so energy- and capital-intensive that it is marked by quite low productivity per hectare but enormous productivity per worker/ <sup>(Hayami & Ruttan, 1971)</sup> And so the U. S. exportable food surpluses and Third World dependence rise concomitantly. Even in a crop like rice, where U. S. production in 1971 amounted to only 1.3 percent of world output, America is the main seller on the world food market, supplying 23.8 percent of global rice exports (Omvedt, 1975:5 citing FAO data). Moreover, all indications are that Third World food dependence will continue to increase over the short term: "Current production and demand trends indicate that the cereal deficit of the developing world, which stood at 16 million tons in 1970, will rise to over 90 million tons by 1985" (FAO/WCARRD/INF. 3, 1979:iv). And while there are no

dearth of Western experts predicting catastrophic famine, most seem to do so from perspectives that have little to do with how agricultural production is organized in Third World countries.

The most popular scenario for disaster remains runaway population growth - the old Malthusian nightmare of geometric population growth outstripping arithmetic food supply growth. Since 1972, an exceptionally devastating year for widespread bad weather, climatic trends have been increasingly invoked as causes of future famines. Most experts (e.g., Reid Bryson) are concerned about a feared long-term and severe cooling trend, although a minority forecast a hot-house carbon dioxide "greenhouse effect." And some agricultural experts are concerned about the potential for ecological/plant genetics destruction as ever more of our food is grown under conditions of monoculture agriculture using a smaller and smaller number of high-yielding strains of a very limited number of cultigens.<sup>2</sup>

In contrast, recent work on the internal aspect of the Third World food deficit focuses on the social relations of agricultural production that tend to promote vicious circles of agricultural stagnation and shortfall. On the one hand, faced with growing numbers of rural landless and urban poor who must buy food with incredibly limited amounts of cash, developing country governments must act to keep food prices as low and as stable as possible (in some instances, this helps keep wages low and thus competitive for export production for the world market). But on the other hand, the combination of low prices for food and increasingly marginalized food producers exacerbates the problem of not enough food being produced (see de Janvry and Garramon, 1977). Nutritional standards fall, and the nation must spend scarce foreign exchange to stave off starvation. Contributing to the problem is the fact that most of these countries devote most of their inputs assistance (research, extension,

credit, seeds, fertilizer, pesticides, etc.) to the production of export crops - frequently inedible ones - while food crops are all but ignored. But is it "benign neglect?"

In many instances, governments have not intervened until the crisis point has been reached. For example, in recently drought-wracked Upper Volta, it was observed that "not until the famine of 1973 did the satisfaction of food requirements figure in the list of governmental priority development objectives" (S.A.E.D., 1978:23). More recently still, the Los Angeles Times (June 15, 1979;1-B-1) reported on the aftermath of 1979 food riots in Monrovia, Liberia that left 41 persons dead. "The riots erupted April 14 after the government announced that the price of rice, a staple in the Liberian diet, would be raised from \$22 to \$30 per 100-pound bag. The price hike was intended to give farmers an incentive to increase production." The farmers are still waiting for an incentive, however. Because of the riots, the government has abandoned its plan to raise the price of rice.

And between crises, the impetus toward cash crop export agriculture typically results in food crops being grown on increasingly marginal land by an increasingly hard-pressed labor force who may barely be able to grow enough for their own families - let alone produce a marketable surplus. Moreover, these subsistence-oriented food producers can't afford to take chances with their families' lives. So they prudently stick with the tried and true varieties characterized by low yields, to be sure, but also by low variance of yield (see, e.g., Scott, 1975). Meanwhile, the contradictions deepen and the food crisis grows.<sup>3</sup>

### C. Women, the True "Invisible Hand" in the World Food System

Parts A. and B. above have been written in the fashion typical of the literature in these respective fields (development-with-equity and the food crisis): women are nowhere mentioned. From the above discussion of these issues, who would have suspected that growing evidence shows that poor rural women are disproportionately driven into deeper marginalization than their menfolk - both by the local impact

of the larger trends in the world economy and by the majority of the planned development programs aimed at rural populations? Even more to the point, who would have suspected that the majority of the world's food is produced by women?

Yet both seem to be the case. Subsequent sections of this paper will attempt to document what happens when women are put at the end of the line of development priorities. To be sure, the women themselves tend to lose control of whatever means or fruits of production they previously had at their disposal, and find themselves plunged into circumstances of greater uncertainty and marginality (Boulding, 1979 refers to women as "the periphery of all peripheries," and characterizes women subsistence farmers as the "fifth world"). But to the extent that this neglect typically results in lower nutrition, pro-natalist pressures and greater concentration of resources in the hands of a narrow male elite - as will be discussed below - even "GNP development" is slowed. And "development with equity" may be aborted.

With respect to women and food, the problem begins with national statistics that rarely record what poor rural women are doing (see, e.g., Deere, 1977; Garrett, 1976). But even so, recent UN estimates indicate that they are doing more than almost anyone suspected:

It has been estimated by ESCAP and ECA that women provide 60 to 80 percent of the agricultural labour in Asia and Africa; in Latin America, according to ECLA, the percentage is 40 percent (UN, A/33/238, 1978:5).

Only in the case of sub-Saharan Africa and certain parts of Southeast Asia had there been any general vision of women as agricultural producers. This recognition (often a disapproving one) has been most manifest in those areas of horticultural production characterized by Boserup (1970) as "female farming" zones. And even here, national statistics concerning women's agricultural participation vary wildly. None approach the levels estimated by the Economic Commission for Africa in the following table:

TABLE 1: African Women's Participation in: (A) Production/Supply/Distribution; (B) Household/Community; and (C) Non-Formal Educational Access

<u>Responsibility</u>	<u>Unit of Participation</u>
<b>A. <u>Production/supply/distribution</u></b>	
Food production	0.70
Domestic food storage	0.50
Food processing	1.00
Animal husbandry	0.50
Marketing	0.60
Brewing	0.90
Water supply	0.90
Fuel supply	0.80
<b>B. <u>Household/community</u></b>	
Bearing, rearing, initial education of children	1.00
Cooking for husband, children and elders	1.00
Cleaning, washing, etc.	1.00
House-building	0.30
House repair	0.50
Community self-help projects	0.70
<b>C. <u>Areas of Access to Non-Formal Education</u></b>	
Agriculture	0.15
Animal husbandry	0.20
Cooperatives	0.10
Arts and crafts	0.50
Nutrition	0.90
Home economics	1.00

Source: The Changing and Contemporary Role of Women in African Development, UN Economic Commission for Africa, 1974; Country Reports on Vocational and Technical Training for Girls and Women, UN Economic Commission for Africa, 1974; studies, mission reports, discussions. Units of participation are calculated on the basis of estimates of women's time as a percentage of all the time expended in a particular task. Units of participation were proposed in: Data Base for Discussion on the Interrelations between Women in Development, their Situation, and Population Factors, UN Economic Commission for Africa, 1974. Units of participation were determined first for areas within countries, then for countries, then for Africa.

This table was compiled from versions of the above materials in UN A/33/238, Effective Mobilization of Women in Development: Report of the Secretary General, 1978:9 and Zivetz, Laurie, "The impact of rural development on women and its consequences for fertility in Africa," 1979:2.

Three points should be briefly mentioned concerning the table. First, the 70 percent share of women in agricultural production may come as a surprise to developers accustomed to the much lower rates found in national accounts (women-in-development people, for whom this table is becoming a "standard exhibit" tend to talk primarily with each other). Second, it is evident from the data that women's role extends throughout the entire food system: 50 percent of storage, 100 percent of processing, 60 percent of marketing - as well as 100 percent of cooking. Often, women's contributions to areas of the food chain other than cooking are even more "invisible" than their participation in production. Third, Part C of the table, women's access to non-formal education, may be characterized as reflecting "a perception of women's roles which has been translated into development programs and policies" (Zivetz, 1979:1). If that is so, it is evident that development is being short-changed because it is primarily women's "non-economic" roles that have been translated into training programs. It goes without saying that the women themselves are being shortchanged, as are their families.

What can we make of the high rates of participation in production shown in this table? Do these data, and the surprisingly high/estimates of female contribution to agriculture quoted above, indicate a recent aberration from some historic, well-nigh universal role of women as non-producers? Are economically active women just another distortion of development? <sup>UN</sup> Conversely, are there strong patterns of female participation in production that cross-cut countries at different levels of development? These are important questions for several reasons. First, if, in fact, women have been productive throughout the major part of human evolutionary history, this knowledge has been little recognized outside of a fairly narrow circle of specialists. Second, it appears that sex division of labor in production varies significantly by social class and development pattern and is being greatly affected by contemporary trends in the world economy.

Before exploring the specifics of female economic roles around the world, let us sketch in some of the contemporary economic trends and development policies that are transforming Third World agriculture - and the lives of both poor rural women and men.

## II. THE CULTIVATION CRUNCH

In the most general terms, the penetration of the market economy into the countryside has tended to: (a) increase uncertainty in the lives of the rural poor by undermining pre-existing systems of security and communal aid, and (b) displace labor. Moreover, it appears that both trends have been observed not only in contemporary Third World rural areas but also in European ones centuries ago, from the earliest days of the commercialization of agriculture. Actually, international trade in agricultural commodities contributed to the initial rise of capitalism in Europe in the 1400s (see, e.g., Wallerstein, 1974) and remains crucial to this very day.<sup>4</sup> By the early part of the 19th Century, the inherent dynamism and innovation of the feverishly expanding capitalist system begat the Industrial Revolution in Europe. Manufactured goods from the core countries flowed outward. What flowed back, on ever more favorable terms as colonialism consolidated the control of the core countries, were the raw materials and agricultural products needed by the new industrial nations to fuel the insatiably expanding capitalist-industrial colossus.

As a three-tiered world system emerged (core, semi-periphery and periphery countries, to continue the Wallerstein terminology), export-oriented enclaves progressively developed in the latter two categories of societies. The penetration of the "cash economy" proceeded unevenly.<sup>5</sup> But even in the most remote rural areas, residents became forced to exchange some production or labor for cash, since money became required for a growing variety of transactions - including taxes. However, to the extent that these rural people did continue to provide the bulk of their subsistence needs via non-capitalist modes of production, their monetary returns from their output or work remained low (see, e.g., Deere, 1976). Most of the benefits of this state of affairs flowed to the core countries.

But such a pattern of development tended to accentuate internal inequalities as well.<sup>7</sup> In part this is because development in the Third World has tended to be highly capital-intensive - even though the process was predicated on cheap labor (a factor emphasized by, e.g., Amin, 1976; de Janvry and Garramon, 1977; and Deere, 1977). Numerous studies in numerous countries document how little employment the transferred technology of the core countries has generated in developing nations. Actually, since the technology was developed to serve large-scale industries in the core countries where factor prices (including a long era of cheap energy) favored and favors capital- over labor-intensivity, this should not be surprising. What may strike many as surprising, though, is that planned government development policies in most Third World nations enthusiastically promoted the capital-intensive path to "modernization." The resulting inequities have been greatest in the countryside, where the severest hunger, and seeds for an even deeper crisis in both food and development, are to be found.

#### A. The Rich Get Tractors and the Poor Get Going

As background, it must be stressed that prior to the push for agricultural mechanization, most Third World countries (other than previously horticultural areas) already had highly class-stratified systems and inequalitarian land tenure arrangements. Some of these were indigenous, as in much of Asia; others were imposed, as in Latin America. In either case, those already in control of major means of agricultural production proved to be in a much better position to control the internal benefits of its "modernization."

And regardless of their other differences,<sup>8</sup> most capitalist-oriented Third World governments stressed certain commonalities in their development strategies over the last two or so decades. Industrialization was to be pushed, along with increased productivity in the export commodities whose earnings were expected to help pay for said industrialization. Factor prices typically were adjusted accordingly, with substantial incentives offered for importation of capital equipment. Given inflation, and generous credit terms, those who imported the modern miracle machines might

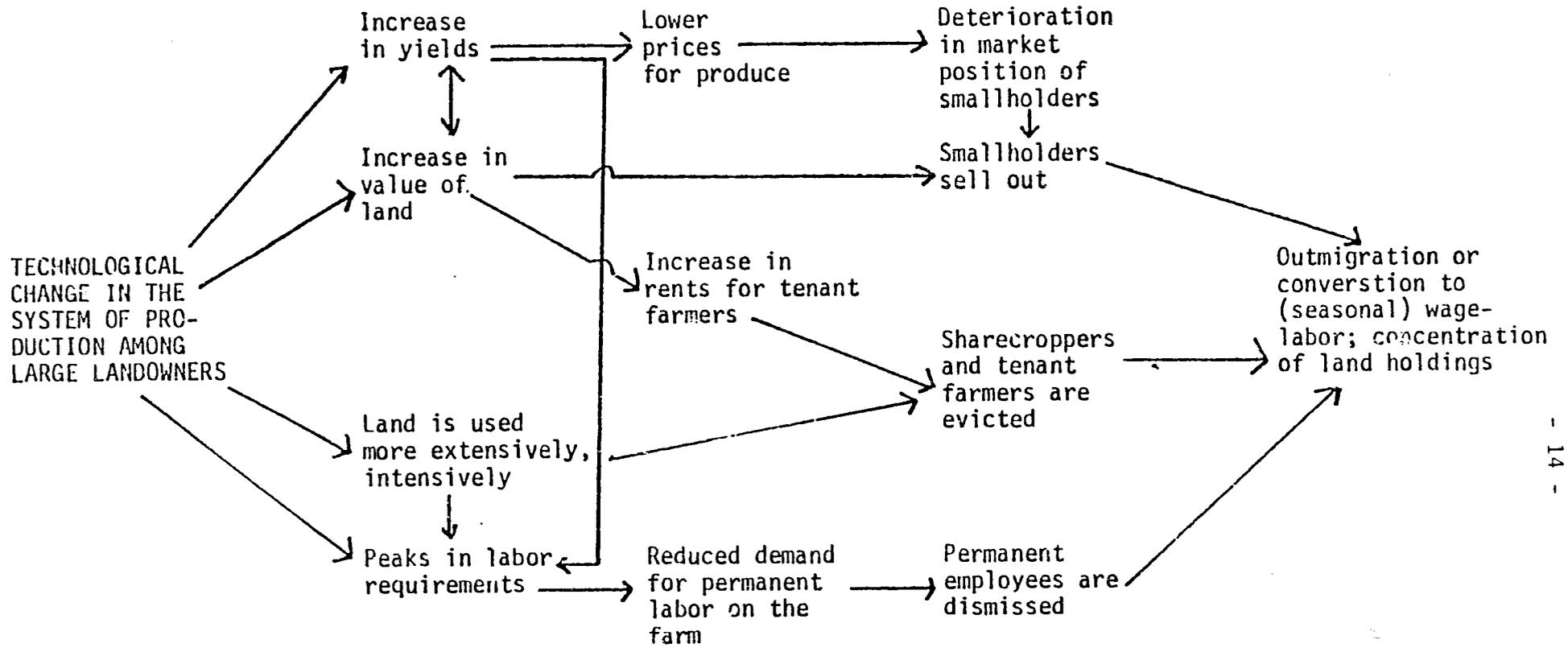
end up paying substantially less than their actual purchase cost - "an offer they couldn't refuse" (see, e.g., Ambercombie, 1972; Griffin, 1974; Thiesenhusen, 1971; Ahmed, 1973; Gotsch, 1973; Frankel, 1971; Griffin and Khan, 1972; and the Stokes, et al., 1979 discussion in which these issues are summarized). In short, technological innovation - mostly capital-intensive - came to the larger farmers in most capitalist-oriented Third World countries by a combination of indirect macro trends in the development of the world capitalist economy (e.g., agribusiness multinationals' expansion) and direct inducements by the governments involved.

The combination of such technological innovation and unequal concentration of the means of production has resulted in a process whereby more and more of the rural poor are marginalized, with many of them being forced out of agriculture. Part of this process is summarized in the following diagram from Stokes, et al. (1979:67):

-----  
Figure 1 about here  
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It appears that this diagram is relevant not only for export crops, but also for most of the high yield varieties (HYVs) of the Green Revolution. The benefits of these improved food grains were supposed to go to small farmers, but even where the seeds were distributed free of charge, an ample literature demonstrates that they required an entire "package" of inputs - from irrigation and/or fertilizer to credit - that were beyond the reach of most small farmers in most areas. Further complicating the picture was the fact that the new miracle grains tend to have much higher variance of yield than the traditional varieties they were to replace. Poor cultivators just couldn't afford to take a chance, and their governments just couldn't afford to subsidize all of them. The net result adds another group of case studies to Figure 1.

FIGURE 1



Source: Stokes, et al., 1979:67.

B. Manipulating Fertility, Freedom of Movement, Family and Female Labor for Survival

Figure 1 clearly indicates both the uncertainty-enhancing and labor-displacing effects of agricultural modernization on the rural poor. Rather than examining its intricacies (large literatures exist for each process in the diagram), let us move on to some of the topics it excludes. In particular, let us examine the coping responses of the rural poor to their deteriorating situation.

Two of the major responses may be labelled "demographic:" (1) changes in fertility, and (2) changes in migration patterns. In turn, these intensify "modernization"-induced changes in two other areas: (3) household/family structure, and (4) sex division of labor and resources. The first three will be discussed briefly in this section as a prologue to the region-by-region examination of the fourth topic undertaken in III. below.

It is not sufficient to look at changes in any of these areas as the mechanical outcomes of the larger, macro processes described above. Poor rural people, especially, have few degrees of freedom, but they too can attempt to exercise some control over each of these four areas. Given that the intrusion of the cash economy produces changes that tend to undermine traditional systems of "social security" and crisis aid, and that these have not been replaced by new formal institutions in most of the Third World, poor people's survival may depend on how well they can transform the pressures on their lives into adaptive strategies for hedging disaster.

1. Fertility. One of the ways they tend to do this is by adjusting their fertility. More often than not, the evidence indicates, this adjustment is upward. According to the American Association for the Advancement of Science (1974), such a "fertility spurt" has almost invariably accompanied the intrusions and dislocations of the cash economy. To paraphrase Mamdani (1972), these people are not poor because they have too many children; rather, they attempt to use their children as a solution to the problem of their poverty. Where opportunities for obtaining cash income exist, either locally or at a migration destination, so that some of the

offspring might earn money at least some of the time, it makes sense for a poor family to have a few extra children - if their relative cost-benefit ratio while they are young does not make this prohibitively expensive. And rather than being an expense, children of poor rural people in many parts of the Third World seem to bring net positive benefits, often from a fairly early age (see, e.g., White, 1975; Schnaiberg and Reed, 1974; Nag, White and Peet, 1977).

Under these circumstances, it makes much more sense for such people, as family members, to invest in "quantity" vs. "quality" of children. Unfortunately, this strategy, while providing the possibility for some families and individuals to achieve a better life thereby, tends to undercut the position of the poor as a class. It also tends to redound to the disadvantage of their country in those nations (such as India) where each new mouth represents a net drain on the nation's resources (Enke, 1960).

To the extent that increased fertility is not incompatible with women's economic activities, women, too, may favor such a strategy. After all, young children may from an early age help relieve women of their burden of repetitive drudgery in fetching wood and water and endlessly processing the staples going into the daily diet (see, e.g., Youssef, 1979). And where children can help with production tasks, this motivation should be reinforced.

2. Migration. Much attention has been focused on the enormous contradiction that development trends tend to expel rural poor from their access to production without providing new niches for them in the urban cash economy. And where peasant populations are evicted or ejected en masse, there is little doubt that the immediate result for the individuals involved will likely be unmitigated disaster. Nonetheless, the impact of migration is not often such a wholesale elimination of a marginal rural population. Perhaps more often, members of families will migrate, while maintaining ties with, and occasionally sending or bringing remittances or other benefits to, the close kin they left behind. Such short or long-term migration patterns provide the possibility of using selective movement as a survival strategy.

To the extent that migration is sex-selective, the consequences are likely to be profound for both family structure and the sex division of labor and resources. And, as it happens, most migration is indeed sex-selective. Rural-urban migration streams in Latin America are largely female, but even there, seasonal migration tends to be more heavily male. In most of the rest of the world, migration streams tend to have a heavily male majority. What does this mean for the family patterns of affected groups?

3. Household/Family Patterns. One of the major consequences of male-majority migration streams has been a great increase in the ranks of de facto as well as de jure female heads of household. Recent United Nations estimates indicate that women "serve as head of over one-third of the rural households in the developing world" (Leeper, 1978:129, emphasis added; see also Buvinic and Youssef, 1978, and Blumberg with Garcia, 1977). And since female-headed units are almost invariably poorer than their male-headed counterparts (reflecting both women's lower remuneration and the presence of fewer income producers in the average woman-headed household), problems of family well-being tend to be magnified. Family well-being is greatly affected by household composition as well as headship, and migration can affect this in various ways. Retaining additional income earners, vs. acquiring additional dependents, can clearly lift or depress family economic welfare. On the one hand, studies in the U.S. indicate that it is the poorest families who are least successful in retaining their offspring in residence once they have begun to earn a living of their own (Morgan, et al., 1973).<sup>9</sup> On the other hand, for the poorest rural Third World families, even if such children continue to help out only occasionally, those small amounts of cash may make a big difference.<sup>10</sup> And the poorest families are precisely those who seem likely to form flexible sharing networks with their kin, as a kind of mutual insurance (see, e.g., Stack, 1974). In short, although it appears that economic factors may strongly influence household and family patterns, it also seems that people tend to adjust the specifics in a survival-enhancing manner wherever they can (Blumberg, Winch and Reinhardt, 1974).

4. Sex Division of Labor and Resources. It already has been suggested that female well-being and relative equality are more affected by her relative control of the means of production than by the extent of her labors. Although the specifics of "women's work around the world" are dealt with in the next section, a couple of general comments seem appropriate at this point. (The first is that the trends described in Figure 1 tend to increase women's work while decreasing their control over resources.) The second is that just how family resources are divided among male and female partners can make a big difference in family welfare, since evidence is beginning to accumulate that the sexes have markedly different ways of disposing of any new income they might obtain.

Stavrakis and Marshall (1978) researched a situation in Belize where the introduction of sugarcane production in 1973 rapidly resulted in: (a) the decline of food production, (b) the loss of female resource base, and (c) no improvement in the generally poor prevailing level of child nutrition. The rise in sugarcane production, controlled by men, generated quite a bit of income locally, which accrued to the men. However:

...money flowed out of the system as fast as it came in, spent on drink, trucks, travel and purchased female companionship. By and large it did not benefit the women at home tending the children and animals (Stavrakis and Marshall, 1978:158).

In contrast, there have been some indications that an increase in income generated by and controlled by women may be used for more immediate family welfare concerns. For example, this seemed to be the case in a rural mango puree canning operation established by a women's cooperative in a village in Honduras' poor and drought-prone Pespire region which I observed in 1978. Research to establish the generalizability of this finding would certainly be indicated.

To reiterate, then, over and above the sex division of labor is the sex division of resources within a class. And it appears that changes in the sex resource base will affect what is done with increasing or decreasing resources in the class.

Thus:

The hypothesis is that enhancing the proportion of the class's resources in the hands of its females should have faster and more immediate consequences for the level of individual well-being than comparable increases in the hands of the males.

If this is so, then we have added still another "contradiction of development" to those causing marginalization and malnutrition among more and more of the Third World's rural poor. Where the woman's position falls relatively farther behind, then because of her unique relationship to food and family welfare, it may be precisely the life- and equity-enhancing aspects of development that suffer disproportionately. This implies that even successful programs to make more equitable the distribution of resources between have and have not classes within developing countries, and have and have not nations within the world system, may not be enough to bring the hoped-for better life and benefits to the world's rural poor. In addition, the optimum remedy would seem also to require a concerted effort to "recognize, preserve and enhance" the role and resource base of women vis-à-vis the entire agricultural system - including food production, processing, storage, marketing, preparation and consumption spheres.

In the next section we shall see where women presently are in each of these spheres in the major regions of the developing world, and where both the unplanned economic trends and the planned intervention programs of development are taking them.

### III. WOMEN, FARM WORK AND FARM WEALTH AROUND THE WORLD

As final background for this regional examination, let us recapitulate. From the argument thus far, it appears that there are two kinds of commonalities linking the development-with-equity and food issues: (1) economic factors, and (2) the (largely unrecognized) role of women in agriculture.

(1) Economic factors: The achievement of both development-with-equity and adequate food for all seems to have been hindered by the fact that most Third World nations are caught in a similar "economic niche" with respect to the world economy. Most concentrate on the production and export of a few crops and/or natural resour-

ces in capital-intensive ways that increase the gap between rich and poor and the malnutrition of the latter. Because of the deepening cycle of poverty, the most marginalized have not been able to afford to adequately feed themselves, i.e., effective demand has remained below the level of food needs (Cox, 1978:95). True, more and more Third World governments are spending more and more of their foreign exchange to prevent hunger from getting out of hand (especially among the generally more restive urban population). But ironically, this has resulted in the rural population being doubly penalized: the imported food is less likely to reach them in the first place, and the fact of its importation further erodes their return from agriculture. As a result:

Those in the world most threatened by famine are people whose major economic activity is food production! Starvation, 1970s decade version, is primarily a rural phenomenon, rooted in rural poverty (Fischer, 1978:107, emphasis in original).<sup>11</sup>

(2) Women: In general, rural women are rarely taken into account in most pontificating and programming on Third World food problems. Where they are, it is usually in terms of their recognized final responsibility for preparing and allocating food: they become the targets of "nutrition education."<sup>12</sup> But typically poverty is much more to blame than ignorance for any deficiencies in the diets these women serve their families. And ignorance of a different sort helps perpetuate these women in their poverty: that of most development experts concerning women's contribution to their country's subsistence base. For the developing world as a whole, that contribution is crucial. New UN estimates indicate that "women, as farmers, produce 50 percent of the food and, in some countries, control and operate up to 40 percent of the national marketing system" (Leeper, 1978:129). But as we shall now see, that global estimate lumps together regionally disparate degrees of involvement. And it is constructed from a data base of incredible unevenness; until well into the 1970s, studies of women's agricultural role and resources were scarce and often shaky. Accordingly, it behooves us to begin with Africa, where the ubiquity and importance of female participation has resulted in somewhat more (and more sys-

tematic) attention having been paid to women in agriculture.

### A. Africa

In fact, it is in Africa that we find the best documentation both for what women do in agriculture and for specific instances in which the forces of economic change and deliberate develop<sup>ment</sup>/programs have worked to their detriment. The results of the Economic Commission on Africa (1974) study already have been presented in Table 1. Other detailed quantitative studies of African women's agricultural system involvement include Cleave (1974), Clark (1975), Haswell (1963), Weil (1973), Rald (1969), and de Wilde (1967). The general picture they present is one of very high female involvement, often far surpassing male.

Given that most of these societies have a horticultural base, this is to be expected: as will be documented in the evolutionary overview below, males are the main labor force in only about one-fifth of known horticultural (hoe-cultivation) societies.

And even though colonial administrators may have considered it unseemly by their standards that women raised so much of the food, their colonial policies capitalized on this fact - and "used women's labor in subsistence agriculture to subsidize the export economies" (United Nations, A/33/238, 1978:21). It was the men who were recruited to work in the mines, plantations and other "modern sector" large scale export enterprises. And the fact that women were able to do almost all the operations of the agricultural cycle unaided by men made it possible to pay those men wages clearly insufficient to provide for the family. It was the women who supported the children and the old people, i.e., who absorbed the costs of sustaining and reproducing the labor force from one generation to the next.

But colonial policy also encouraged male involvement in village-grown export cash crops. Over time, men came to predominate in the money economy, controlling most of the earnings from such local export crops even though their womenfolk provided most of the labor. For women, this burden was assumed on top of their responsibilities for growing, processing, storing and distributing the local food crops.

In short, a pattern emerged whereby woman's work load tended to increase while her control over the means of production tended to decrease.

This pattern may have begun with colonialism, but it has persisted to the present day. Let us examine in turn the causes and consequences of both the increased labor and the diminished economic power.

Above and beyond women's added work in providing labor for a new series of cash crops, other factors augmenting their laboring role include the following; (1) the absence of many of the young males who previously had provided the labor of clearing and tree-felling - this is the group that is most likely to migrate in search of wage labor; (2) the absence of an increasing proportion of the children, who were attending school rather than attending to the routine, repetitive drudgework involved in supplying wood, water and sibling and small animal care to their already hard-working mothers; and (3) the increasing marginalization of the land on which women grew food crops, since the better acreage almost invariably became devoted to cash crops.

The implication of this last factor meant that women had to raise the food on land that was either farther and farther from their homes (the closer-in fertile lands having been switched to male-controlled cash crop use), or, if close, worn out from having been cropped for too long with insufficient fallow time (see, e.g., Chancy, Simmons and Staudt, n.d.). Actually, this latter situation can cause an even greater burden because the problem of decreasing productivity on such tired land is multiplied many times over by the problem of increasing weeding, almost invariably "women's work" in horticultural Africa. Another related problem was the fact that food now had to be raised on less, not just less productive, land. Feeding a large family on less land usually means more work.

But even more serious for women was the widespread erosion of relative control over the means of production. Traditionally, most horticultural sub-Saharan African groups have a patri-oriented corporate kinship system. Under traditional circumstances, land would be considered to belong to the corporate kinship unit, and it

would be parcelled out to those who cultivated it. Women thus had use rights to a particular plot. During this period, individual rights of alienation of land were rare for either sex.

When colonial policy and the onrushing tide of commercialization of agriculture brought individualization of land rights to the countryside, women lost out in a number of ways. Increasingly, their rights to use and administer a piece of land and/or certain of its specific resources were swept aside as legal title (defined in terms of rights of alienation) became vested in individuals - who were disproportionately men. Even in matrilineal areas, women tended to enter into usually disadvantaged competition with male kin when land tenure rights began individualizing. Losing out on ownership, however, did not relieve women of the burden of labor.

Some of the most unjust applications of colonial individual land rights policies occurred in areas of heavy male out-migration. The men might be away for years at a time, and even form new families in their new place of residence. But if the new individual land titles were slated to go to males, it mattered not if the men were away while their wives were supporting their children on its output. In a number of instances, the men, as absentee owners, sold the land out from under the rural wives.

And the practice of awarding men title to land worked by women has continued to the present day: in many agrarian reform, resettlement and/or communal farming schemes the participating party, i.e., the legal beneficiary, is held to be the male head of household. Under these circumstances, it is perhaps appropriate (and certainly provocative) to consider the woman as a sort of tenant farmer, as suggested by Chaney, Simmons and Staudt (n.d.). What incentives or disincentives does she have to improve productivity?

Yet it can be argued that with respect to productivity, the typical woman African farmer has done quite well, considering all her burdens. In fact, there is evidence that women may be better agriculturalists than men. Studies by Mook (1976) and Staudt (1975-76; 1978) document better female than male output, methods and/or

innovation practices under conditions where unequal male access to education and extension was controlled. Mook found that in an administrative division of Kenya in which 38 percent of the farms were managed by women, they obtained 6.6 percent more output at the mean level of input use than the men. In other words, women's output equalled men, in general; but when such factors as access to education and extension were controlled (not surprisingly, women's access was drastically less than that of men), the women's output exceeded that of men. In Staudt's work, also in Kenya, women managed 40 percent of the farms. In an area with minimal levels of agricultural input services (e.g., extension, credit) - by far the most prevalent situation facing the world's small farmers - the women managers proved to be earlier adopters of maize and grew a more diversified set of crops. But in another area where the level of agricultural input services was much higher and long-standing - and aimed largely at men - the women had fallen behind: their earliness of adoption and crop diversification lagged behind men's.

Once again, it should be stressed that it is not women's farming competence that lags behind. For example, Fortman (1978) studied Tanzanian ujamaa villages and found that women were using improved farming techniques. In fact, there proved to be no significant sex differences in scores indicating "good maize practices" within groups of purchasers vs. non-purchasers of improved inputs (seeds, fertilizer, insecticide, herbicide). The relative sex composition of the purchasers vs. non-purchasers of the improved inputs is never mentioned. However, considering women's much lower access to cash income, it would not be surprising if the males considerably outspent them.

The men would seem to have wide latitude to do just that, since, in addition to their own higher cash incomes they typically have many, many times the access to credit. Concerning loan information, for example, Staudt found that households with a male present were fourteen times (!) more likely than those headed by a female to have received detailed data. And men are likely to receive more information, not just about credit, but also about new improved farming practices of all kinds. This is because, as Table 1 shows, they receive the overwhelming share of agricultural ex-

tension and training services.

Moreover, they have done so since colonial days, when the original extension and training services were set up along Western models. Thus, although colonial administrators were presumably aware of women's central role in most African farming, it was men who were offered agricultural assistance. Women were given home economics training (embroidery, table decoration, etc.) instead. And today, now that the tide is turning and women are being considered for more agricultural services, the result is often that the female extension agents, primarily home economists, have to add agricultural duties to schedules already filled with responsibilities for nutrition, family planning, etc.

Actually, nutrition has frequently been a casualty of women's increasing marginalization. Eide, et al. (1977) discuss this issue, and provide examples. For instance:

In Ghana, the introduction of cocoa increased women's workloads because men left the yam crop to cultivate the new crop in order to raise cash. As yams require a high labour input and as women's time for growing food was limited due to their many other responsibilities, they replaced the yam with cassava, which can be planted at almost any time during the year and needs little weeding. But cassava has less nutritional value than yam and cannot be intercropped with vegetables and legumes because it depletes soil nutrients more rapidly than yams (Eide, et al., 1977:41-42).

Other studies, while not as detailed, also cite the decreasing variety, quality and/or quantity of the foodstuffs available to African women to feed themselves and their families (see, e.g., S.A.E.D., 1978; Cloud, 1978; Simmons, 1975).

Yet too many programs continue to assume that it is "traditionalism, or passivity or ignorance" that keep women from enhancing the nutritional content of their diet - not the income, time and other resource constraints usually to blame.

The "ignorance" argument may, a priori, assume that the latest fashion in Western nutritional gospel should replace the allegedly "backward" and low-nutrition crop currently in disfavor. Yet further study may indicate that the women's food practices - when viewed as part of a total system - were not so dumb after all. For example,

per Boulding (1978:32):

In some countries, efforts are still going on to make women stop planting manioc and replace it with more "protein-rich" crops even though the most recent studies indicate that manioc is the best crop for many poor soils, that the replacement crops often serve nutritional needs poorly, and that traditional cooking practices make manioc more protein-rich than urban nutritionists realized (April, et al., 1974).

In fact, the total system approach to agriculture may be the missing key to providing meaningful food crop assistance to African women. Currently, it appears, most programs attempting to promote new food crops to women tend to "blame the victim" if they fail. Rather, these programs themselves usually fail to take into account the many subtleties behind women farmers' decisions to adopt a new food crop innovation. (Incidentally, these considerations are rarely mentioned in the male-oriented literature on "diffusion of innovations" in agriculture.) Women may be concerned about:

- Does the new crop provide the possibility of additional income as well as food? And if so, at what price - not just in money inputs but also in labor? In other words:
  - What are its labor characteristics? It may be the best thing to come down the pike in a generation, but if its seasonality conflicts with women's other, relatively inelastic cultivation responsibilities, and/or if it requires a great expenditure of labor at various points in its cycle, women may not be able to grow it successfully, given their time/labor constraints.
  - What about its variance of yield? It cannot be high, because cultivators living near the subsistence line cannot afford to take chances.
  - Is it easy to harvest? For example, shorter, thicker stalks are a minus.
  - How well does it store? Women are usually responsible for processing-for-storage and storage, and are rarely provided with any technical or material assistance, despite the fact that under the tropical high-pest conditions of African horticulture, high post-harvest losses could eliminate any alleged potential gains for a new crop (see, e.g., McDowell, 1976, for some remedies).
  - How about processing and cooking? Does it mean more work for less taste? Traditional cooking and food combination techniques are only now being recognized for

their often unique contribution to increased nutrition. Would this new food upset such a complexly balanced system?

- Finally, does it lend itself to easy marketing? If it has to be bundled in sizes awkward for the woman to transport, or if does not have any local demand, the woman might be less eager to adopt it. For although the new crop may add some protein to her family's diet, it may be aimed at replacing a crop that also provided extra income from sale of surplus. And presumably that would count heavily for poor women.

The above is not meant to discourage efforts to introduce new, higher-protein food crops for both village and urban consumption, but merely to emphasize that such efforts will require not only adequate extension/inputs aid, but also examination of the performance of the proposed new crop in the entire agricultural/food system.

Such efforts should probably pay closer attention to the last point mentioned above, female marketing activities. Since Boserup (1970) wrote about how female own-account local-level foodstuff traders' position was being eroded by the intrusion of male-dominated larger-scale patterns of wholesaling, distribution and retail trade, a number of studies have provided further corroboration (see, e.g., Human Resources Development Division, UNECA, 1972). Given the Table 1 ECA estimate (1974) that 60 percent of marketing is done by women, consequences of a further erosion of their position will be widespread. For the most part, declining participation in trade will mean fewer income sources and less cash for women, and the accentuation of the outflow of agriculturally-generated surplus from the local areas to the urban centers. This presumably would further limit the local market, and further the process of rural impoverishment vs. the city. Worse yet, if women cannot expect to market surplus food for extra income, they may not produce that surplus in the first place, thus further exacerbating their country's food shortfall woes.

Actually, if the food crisis gets worse, it is likely that more attention and aid will be directed at African female farmers; new evidence of their importance in cultivation is mounting too rapidly for development experts to ignore. But will it be only their role as producers that will be strengthened? What about their position

with respect to control over property? What about the quality of their lives as people? To reiterate, if these continue to be ignored or undermined, then it is unrealistic to expect any great and sustained increase in women's agricultural production.

With respect to women and property, it seems urgent to protect rural females' resource base. This means a concern for women's rights to land, not only in the existing villages, but also in new cooperative or agrarian reform settlements. In those areas where women's property rights already have been eroded by the shift to individual title largely in the hands of males, then the most realistic short-term policies might aim at protecting women's rights to a return from the lands they farm - including, e.g., their rights to market surplus. This, in turn, would be much enhanced if women's position as market traders also was buttressed. A different strategy, however, seems called for in new agricultural ventures: the laws concerning membership and beneficiary status in agrarian reform schemes should permit women to participate in their own right, on an equal basis. In most instances, this will require a change in existing statutes.

More than a change in the laws will be needed, however, to ameliorate women's lot in two of the more pressing "women as people" issues. These are: (1) women's invisible, excluded-from-national-accounts drudgery in grain processing for consumption and/or storage, and supplying the needed water and fuel for both household production and consumption needs; and (2) women's special difficulties as head of household. Both issues are associated with needless hardship, yet neither receive a high priority from most development planners who rarely view them as causal or critical in boosting agricultural productivity. It appears that aid viewed as humanitarian rarely is provided before disaster strikes.

Perhaps for that reason, most of the "appropriate technology" projects aimed at lightening women's daily drudgework are justified in terms of the women thereupon devoting the time saved to production, as in the following quote from Lele (1975:27):

Vail estimates that traditional head portage of family water in Tanzania typically requires a labor-time input of 312 hours per year. The introduction of a \$10 wheelbarrow, which can carry a much larger quantity of water, results in the reduction of labor time of 208 hours per year. If the time saved were transferred to farm tasks, the resulting net increase in agricultural production of perhaps \$20 would more than cover the cost of the wheelbarrow (citing Vail, 1974).

One wonders if those \$10 wheelbarrows can carry that "much larger quantity of water" more easily...And even if the answer is yes, few "\$10 wheelbarrow projects" are being funded. Nor, for that matter, are <sup>many</sup> projects to provide closer-in water and more efficient, less-fuel-consuming cooking arrangements, or grinders or other grain processors, unless they too are tied in with more "economic" goals. Reducing women's work for its own sake is rarely deemed fundable in and of itself.

So too with helping female-headed families, which may, in fact, be viewed as less problematic in sub-Saharan Africa than elsewhere. Although female-headed units are currently increasing in numbers for contemporary economic reasons, they long have been an important feature of social organization in many parts of Africa. This is because under the system of general polygyny and residence with the husband's male kin - which formed the majority pattern among African horticulture/herding groups - each co-wife is provided with a separate dwelling unit and storage facility.<sup>13</sup> But a newer cause of female-headed units has gained steadily in importance: male outmigration. Regardless of how they form, however, female-headed units are typically much poorer than their male counterparts. But here we must distinguish between female farm managers who head their own household and the much poorer women household heads who live even more marginal lives as agricultural laborers or petty traders. The women family heads/farm managers should more frequently find themselves the intended beneficiaries of agricultural advice and inputs as realization of female importance to African farming continues to grow. But for the women without this "handle" for assistance, intervention is unlikely to come unless and until disaster strikes.

Unfortunately, if the recent example of the Sahel is any guide, even disaster may not suffice. Cloud's account (1978) of official response to the devastating drought

of the early 1970s may be used as an embodiment of the growing list of development "horror stories," of the sort initially chronicled by Boserup (1970) and Tinker (1976). The common element in all of these is how the blindness of male development planners to women's productivity, position in the local group, and problems ultimately harms not only the women themselves but also the developers' larger projects.

Cloud encountered a thicket of misconceptions and misguided programs orienting drought relief efforts. First, "the general assumption of development planners repeated to us all over the Sahel was that men owned the cattle; women might own goats and sheep" (1978:73-74). Second, Cloud found that "an examination of the literature, including the AID-sponsored Rupp report shows this to be a misconception." It turns out that animals are owned by individuals but herded as a group responsibility; women may acquire goats, donkeys and other animals in various ways. In fact, among the largest group, the Tuareg, almost everyone is a stock owner (per Nicolaisen, 1963). Third:

In Madame Rupp's seminars with both Fulani and Tuareg herders, one of the major concerns expressed was that the government's program to reconstitute herds lost in the drought was replacing cattle only for the men. Women's stock was not being replaced. This was crippling the social system--animals were unavailable for dowry and bridewealth payments, women had lost their independent property. This was apparently the unintentional result of the government program that issued a card to the head of each family, and replaced animals only to the family head (1978:74, emphasis added).

Thus, fourth: "Program Administrators' lack of understanding of sex role control of resources seriously damaged nomadic women's economic and social positions" (ibid.). But that's not all. There is still another potential consequence, not discussed in the study, which might have been inadvertantly set in motion by these same program administrators: loss of the group's "insurance" and viability in future droughts.<sup>14</sup>

This is because, fifth:

Most pastoralists breed a wide variety of animals and maintain diversified herds as an adaptation to the environment. Camels, cattle, sheep and goats each have characteristics that provide different benefits. Goats breed quickly and recover quickly from drought. They can exist on browse when grasses are not available. Both their milk and meat are palatable (1978:72).

Thus, "[a]s a result, they have great value as a food source in difficult times" (1978:70). And yet it is apparently only the men's cattle that are being replaced.

B. Asia: Although horticultural groups exist (e.g., the hill tribes of Indochina), most of Asia is agrarian, and more stratified and commercialized than Africa:

In contrast with Africa, where women are primarily engaged in subsistence agriculture as self-employed farmers and family workers, a large number of women engaged in agriculture in Asia work as wage earners in commercial farms and on plantations. Thus, in Sri Lanka 72 percent of the female work-force in agriculture are salaried workers, comprising almost 40 percent of the total number of wage earners. In the tea estates, women workers outnumber men and in the rubber estates they make up about 43 percent of the labour force. In the tea plantation industry of India, where around two thirds of the total plantation labour force is engaged, women constitute approximately 50 percent of this labour force. In the coffee and rubber estates, their proportion is somewhat lower, but they still form a significant proportion - 44 percent in the coffee estates and 30 percent in the rubber estates. In Malaysia, about 45 percent of the hired labourers for all types of crops were women (United Nations, A/33/238, 1978:25).

Despite the large proportions of the female agricultural labor force engaged as hired workers throughout Asia, there are subregional differences in sex division of labor patterns by both social class and type of cultivation.

Where irrigated intensive agriculture is not prevalent (e.g., in Northern India), it is usually only the poorest women - those of the rural landless, who work as hired labor. For peasant class women, confinement in or near the house, except perhaps during peak periods, becomes a symbol of class differentiation.

In contrast, under the more labor-intensive conditions of irrigated cultivation, women at all levels of the peasantry tend to do considerable agricultural work. In general, in areas characterized by extensive irrigation systems and paddy rice, women will weed, transplant, harvest, and probably sow. Men usually dig irrigation ditches, construct and repair terraces, and lift water from canals. With paddy rice, each hard working pair of hands can usually produce a bit more than the person's subsistence costs. And the pressures caused by the prevalent patterns of unequal land tenure, landlordism and parcelization typically call for the entire family pitching in for mutual survival. This has had a profound effect on the large-scale export crop sector:

The plantations and the large commercial estates in Asia have had to adapt to a situation where the predominant type of cultivation in the food production sector lends itself to full familial participation. Male labour cannot, therefore, be recruited without providing for the women and the children, in contrast with Africa, where subsistence agriculture is predominantly women's work.

The most expedient means of keeping the effective wage rate low, then, is to employ the entire family (United Nations, A/33/238, 1978:25).

As the UN report then points out, the plantation is thus able to avoid paying male workers a "family wage" in both Africa and Asia because of the agricultural work of the females. In the former continent, women's activities as food producers in the subsistence sector permit the maintenance and reproduction of the labor force. In the latter, rural women wage earners are available as a dividend of the family hiring system. As we shall see, still another pattern prevails in Latin America, but it too precludes the necessity of paying male workers a wage sufficient to maintain their families.

Complicating the picture is the fact that the plantation sector in Asia (as in much of the developing world) is caught in a worsening "price/cost squeeze!" Revenues from sale of their commodities tend to be declining and/or unstable while production costs continue to rise. The response has been widespread attempts to minimize the resident, permanent labor force. For the most part, this has hurt women along with men. However, the widespread sex differential in wages may increase employer preferences for female labor. The UN report, citing a study of plantations by the ILO (1970), notes:

In Sri Lanka, for example, the average minimum wages of females on both the rubber and tea plantations was about 80 percent of the male wage for the period 1960-66, in spite of the fact that women tended to work longer and produce more than men in certain tasks.

During the same period, the price of rubber and tea exports declined steadily. The participation of women on the rubber and tea plantations then increased from 46 to 49 percent and from 40 to 43 percent, respectively (United Nations, A/33/238, 1978:26).

Labor displacement in export crop plantation agriculture often has been paralleled by labor displacement in food crops, when these are grown by larger owners using the new Green Revolution high yield varieties (HYVs).

It appears that the amount of labor displacement accompanying mechanization and/or introduction of Green Revolution "packages" varies greatly by crop and specific techniques introduced; moreover it varies in ways that <sup>may</sup> differentially affect one sex or another. According to the UN report (1978:13), the result has been more marginalization of female than male labor. An example is the study by Billings and Singh (1970) documenting that the introduction of mechanization in the Punjab, India greatly reduced women's labor. In other studies, the differential impact on males vs. females may not be spelled out but would seem to be plausibly involved.

For example, a study by Inukai (1970) is discussed by Stokes, et al. (1979). In Thailand, Inukai found, the traditional combination of broadcast rice with buffalo farming involved 8.8 "man days" per rai. If mechanization introduced tractors and continued the broadcast method, labor use dropped to 5.5 "man days." If, however, the tractors were combined with the more labor-intensive technique of transplanted rice, labor use rose to 10.5. Transplanting is a usually female task, so it might be that women would participate disproportionately in that labor rise. Also suggestive is <sup>the</sup> Amlercrombie (1972) study that detailed labor reductions of 6-19 percent from increasing mechanization in potatoes, a horticultural crop, vs. 50-90 percent labor reductions for wheat, an agrarian field crop.

Unfortunately, few of the landless and near landless will be in a position to influence the form agricultural modernization and mechanization might take in their localities. And the often-recommended remedy, a thoroughgoing agrarian reform, thus far seems to have occurred almost exclusively when one elite was displacing another. A non-socialist-world example is Taiwan (see, e.g., Griffin,

1974:250-251). Taiwan is rarely thought of as a bastion of radical social reform. But when Chiang Kai-Shek arrived, he had to break the power of those elements of the local land-based ruling elite still entrenched after the Japanese occupation. A comprehensive program gave the peasants viable family-sized plots and "packages" of improved seed, credit and small and medium technology. The government became the landlord, until the peasants paid off (over 10 years) their plots. Even so, rents were often lowered. Today, land concentration and official unemployment rates remain quite low in Taiwan. And the country enjoys the highest per hectare productivity of any nation examined by Hayami and Ruttan: 10.24, vs. 7.47 for Japan, the country in second place. (In contrast, the U.S., with its capital- rather than labor-intensive agriculture, has a per hectare productivity figure of 0.80.) Concomitantly, it is interesting to note, it appears that reproductive pressure on women has eased considerably: Ravenholt and Chao (1974:J-28) report that average number of children born per woman declined from 7.5 in 1951 to 3.4 in 1972.

The grim possibilities that agricultural mechanization and other Green Revolution miracles can bring to those who are both landless (or near-landless) and female, in the absence of major ameliorating structural change, may be seen in Java today (see, e.g., Stoler, 1977; Milone, 1978). Women have long been crucial to Javanese wet-rice cultivation and moreover enjoy considerable economic autonomy. Over the course of the last century, <sup>scarcity and</sup> land/concentration in Java/rose steadily <sup>both</sup> because of (1) the leasing of peasant land for such estate crops as sugar and (2) the (probably resultant) increase in population pressure (Milone, 1978:84; Geertz, 1963). By the 1970s, surveys showed that "over 75 percent of the villagers were without enough rice land to sustain themselves and had to seek off-farm sources of income" (Milone, 1978:86). For women, especially poor ones, the largest source of such income came from harvesting rice.

Then came the Green Revolution varieties of rice and the mechanical rice huller. The HYV rice has a heavier stalk, making it difficult to harvest with the traditional bamboo knife used by generations of women. It is more efficiently cut with steel scythes, too heavy for women to use easily. Almost overnight, much of the harvesting has been turned over to crews of scythe-wielding males brought in by the middlemen who buy the crop. On top of this devastating blow to landless and near-landless women has been that dealt by the introduction of the mechanical rice huller. Previously, <sup>the in-kind shares earned through</sup> rice-pounding supplied an important source of subsistence to poor women. But with the mechanical rice huller, a much less labor-intensive operation using male workers, this too appears to be vanishing forthwith: "by 1973 less than 50 percent [of rice] was hand-pounded, and some observers suggest as little as 10 percent" (Milone, 1978:153).

Incidentally, the new techniques of harvesting the Green Revolution-variety rice destroyed another source of poor women's income: transporting small amounts to local markets. With the new harvesting methods, rice began to be bulked into large sacks, too heavy for women to carry, right in the fields.

And what has happened to the women of other classes? In this paper, I have suggested that women's position <sup>and autonomy</sup> rests on the proportion of the means of production they control, and I have proposed that in class societies, this be compared with the resources controlled by the men of the class. Applying these criteria, we find that in certain parts of Indonesia, where women control the bulk of the means of production, they have been beneficiaries, not victims, of mechanization:

In West Sumatra, the women's clans still own the land, and the effect of the introduction of the HYVs was entirely different than in Java. In fact, women buy the costly inputs, own the rice hullers, and employ men with knives and scythes to help in the harvest. Before these developments, Minangkabau women kept control of earlier technological innovations, such as mechanical spice grinders and the water driven mills which they still own and use to grind flour. In Aceh, as well, where women can own the rice fields, they have kept control of earlier labor-saving devices, such as mortar and pestle for rice pounding, and now use hullers to reduce losses and produce a better quality of rice (Milone, 1978:156-157; emphasis added).

In a sense, the above example permits us to conclude the Asia review on an upbeat note. But, as it happens, the situations in today's world where women continue to control a substantial or majority share of the group's means of production seem limited. And they seem to be shrinking.

C. Latin America: This region does not seem to offer an exception to the above generalizations. Statistical examinations of the region are plagued by gross but idiosyncratic underenumeration of female involvement in agriculture (see, e.g., Deere, 1977; Buvinic, 1978; Garrett, 1976; United Nations, A/33/238, 1978). For the region as a whole, the relative weight of the agricultural sector has been declining in recent decades and the rate of labor absorption in agriculture also has been decreasing steadily (United Nations, A/33/238, 1978:28). But the underenumeration makes it difficult to assess what has been happening to women, especially in the less industrialized areas of Latin America. In such places as Bolivia, Ecuador, Mexico, Peru, and north and north-east Brazil, the actual rate of female participation in agriculture - as opposed to government census statistics - "has been estimated to be high above 50 percent to 60 percent" (ibid.).

Generally, "[r]ural Latin America has been and remains dominated by an extraordinary degree of concentration through the latifundia-minifundia pattern" (Stokes, et al., 1979:40). Even where land reform has been attempted, its effects have not significantly altered the prevailing pattern (or, have not done so for long, as events in Chile and Peru have shown). Thus, according to the most recent FAO study (1979:3), "85 million people constituting 70 percent of the farm population in Latin America lived at the subsistence level." About half of these are small farmers and the other half are agricultural wage-labor.

How have women fared in all this? The key to understanding their situation lies in the changing composition of the rural labor force as Latin American agriculture has moved relentlessly toward commercialization in recent decades. New, completely capitalist agribusiness ventures raising plantation crops and/or cattle for export have been started, and more and more of the traditionally underproductive latifundia (large estates) have been moving in this direction. Within an overall pattern of the proletarianization of the labor force, several trends can be observed. First, the resident, permanent workforce on the large holdings has been declining in both relative and absolute terms (and sometimes very dramatically, as in Chile between the 1930s and 1960s, per Garrett, 1976). Second, there has been a substantial increase in the cohorts of temporary, seasonal wage-workers. Third, the categories of proprietors and unpaid family workers on small farms, the minifundia, have increased as well.

In terms of sex division of labor, it was women who were disproportionately displaced from permanent employment on the large estates (Garrett provides statistical documentation showing that in Chile's Central Valley, elimination neared 100% by 1965). If they remained in agriculture, they tended to become more and more concentrated in the category of unremunerated family helpers, where most of them became invisible to national accounts. And the poorer they were, the greater tended to be their contribution to family farm work and decision-making (Deere, 1977:14, found that among the landless/near-landless, women provided 35 percent of the labor requirements, vs. only 21 percent among the middle peasantry;<sup>15</sup> the poorest women also tended to have the largest say in decisions that were made jointly among the middle peasantry). But it appears that women are taking on an increasingly important role in a decreasingly important source of family livelihood<sup>16</sup> the minifundias are becoming smaller, poorer and more marginal. In Deere's Cajamarca, Peru study, 71.3 percent of the total land units in the province involved parcels of less than 3.50 hectares; on such farms the labor requirements do not exceed two months a year (Deere, 1977: 13, 19). Under such circumstances, off-farm income holds the key to survival.

But it has been their menfolk who have been disproportionately drawn into the

category of temporary wage labor, in a process of seasonal migration to the large estates and plantations. Such patterns have been documented for large regions of highland Peru, north-east Brazil, and elsewhere, Deere argues that such patterns reduce labor costs in the large commercial farms since they do not have to pay a full family wage. In this way, she proposes, capitalist and non-capitalist modes of production dovetail neatly to the profit of the former.

For many women, however, these new labor patterns left them with no place at all in the rural economy. Many of them followed the path of "Hermalinda," the Peruvian domestic whose story is movingly recounted by Chaney (1978) and migrated to the urban areas, to marginal opportunities as domestic servants, ambulatory vendors, prostitutes, and the like. In fact, Latin America, as noted above, has the distinction of having a primarily female rural-urban migration stream (see, e.g., Youssef, et al., 1979). And these women, Chaney indicates, rarely go back to the countryside even to visit.

For those who remain in the rural sector, several other patterns (aside from the unpaid family workers on subsistence minifundia and the very small proportion of permanent workers on the agribusiness enterprises) obtain for poor women.

Some do work on plantations, especially in crops such as coffee, but it is overwhelmingly as seasonal, temporary labor. Moreover:

Whether working as permanent or temporary labourers, women in different countries of South and Central America appear to receive lower pay than men. In Colombia, for example, the basic wage for the permanent adult female workers was 40 percent lower than that of males and, for the temporary workers, the basic wage was 32 percent lower for the women. Similar sex-based differentials were found to be the usual practice on the sugar cane and coffee plantations in Costa Rica, Guatemala, Nicaragua and Peru, as well as in the cotton estates in the various countries (United Nations A/33/238, 1978:29, citing the ILO (1970) plantation study).

Still another pattern is described by Rubbo (1974), writing about the coming of capitalist agriculture to the Cauca Valley of Colombia. The region had long had a subsistence sector in which women frequently headed their own families and farmed horticultural smallholdings emphasizing perennial tree crops for income (coffee and

cocoa), intercropped with a variety of food crops that required little weeding in the well-shaded and luxuriant biosystem. Something ripened every couple of weeks and the crop mix was such that labor inputs were fairly constant (and low) the year round. But increasingly, that landscape has given way to monoculture of sugarcane, rice and other annual cash crops. Many of the women have been forced out of their holdings by the voracious land-hunger of the expanding plantations. But others have been pressured to cut down their trees and clear their gardens by their sons, who, urged on by male extension agents, have been increasingly introducing annual commercial crops. This deprives the family of a steady food supply and exposes them to the vicissitudes of the world market - with the result that many more of the small holdings go under. The women then become increasingly dependent on male access to wage labor, and/or are recruited into labor gangs of temporary female workers who reside in the towns and are subcontracted for at the lowest of wages. In short, here we have another example of women losing both absolutely and in relation to men as they lose control over their traditional means of production.

The various patterns described above have tended to promote fragile family ties between male and female, and have helped swell the ranks of female heads of household. One frequent scenario is when the male fails to return from a stint of seasonal migration. But regardless of its genesis, the rural female-headed family is likely to be the most marginal of all, with the least adequate access to the means of production.

What then of agrarian reform? How have women - especially female family heads - fared under the redistribution and resettlement schemes aimed at reversing the trend of rural pauperization? First, it appears that land reforms accomplished to date have been largely ineffective in changing the overall patterns of inequality of access to the means of production.

Second, it also appears that they have been either ineffective or actually detrimental with respect to women's position. Unless a woman is the head of a family with no adult male present, it is usually impossible (or very, very dif-

ficult) for her to be named as the legal beneficiary of agrarian reform, and/or the officially-recognized "member" of any resulting cooperative control structure. (It also seems difficult for female family heads to be so named in practice vs. theory, and they tend to be disproportionately underrepresented in the reformed sector.) And without such recognition, she is unable to receive credit and many other forms of assistance.

Resettlement schemes often have been particularly hard on women, since emphasis tends to be given to cash crops for the men. If the women are remembered at all, it is typically via allocation of a minute "kitchen garden" outside the house, in which they are supposed to grow nutritious vegetables for the family. Sometimes (as in the case of Honduras) it is legally impossible, under the terms of the agrarian reform/resettlement law, for the women to be allocated land for women's cooperative production. This leaves the women completely dependent on their men in a strange and often hardship-filled environment.<sup>17</sup> Ironically, even though agrarian reforms are usually targeted to affect only a tiny fraction of the rural population, governments are increasingly devoting the lion's share of their extension and other input services to the "reformed" sector. And since women's productive role in the reformed sector generally has been so small, the aid targeted for women is typically the traditional home economics package.

Overall, then, under the continued domination of the latifundia-minifundia pattern, both poor men and poor women have failed to gain increased access to land or employment. But it appears that women have tended to fall even farther behind. In a sense, these increasingly marginalized rural females seem to suffer from a combination of the negative consequences of both the African pattern (where women work harder with less help to grow more of the food crops in the subsistence sector) and the Asian pattern (where women work for wages in the cash crop sector, but at the lowest-paid and least stable jobs). And their plight is much less visible: their participation is in categories that "fall between the cracks" of national statistics.

D. Middle East: The stereotyped view of rural women is that in most of the region, they play at best a very marginal role in agriculture, have low skills and little tradition of participation aside perhaps from the peak seasons of the yearly cycle. This view seems consonant with the national statistics of most of the nations in the area, which tend to show very low rates (the lowest in the developing world, in fact) of female economic activity.

Yet, here too, village studies are providing a recognition that women seem to be much more active than previously thought:

For instance, against the Tunisian estimate that 13.2 percent of rural Tunisian women were economically active in 1972, Nassif found that approximately 40 percent of the adult women in a small Tunisian village she was studying had economic roles, from which they derived some income (Van Dusen, 1977:23, citing Nassif, 1976).

Van Dusen does not regard the discrepancy as the result of a "willful disregard or deemphasis of women's employment by the government;" rather, she argues, it stems from a problem of definition: "traditionally, in specifying 'economic activities,' the entire informal market system is excluded" (Van Dusen, 1977:23-24). Women's roles in animal husbandry, often quite important - especially in North Africa, per Badran (1972) - also tend to be excluded from official purview.

other factors may be at work. For example,  
But in addition to definitional problems, "the pressure of cultural norms would explain, in part, the underenumeration of working women in agriculture, since farmers are generally reluctant to report that their wives and daughters have a gainful occupation" (United Nations, A/33/238, 1978:27, citing Youssef, 1977).

Moreover, trends in the region seem to indicate that women's participation in agriculture and other economic activity is increasing and likely to rise further in the future. A major impact stems from international migration, which, except in Turkey, tends to be heavily male. For example, in Yemen, approximately half the male labor force is out of the country at any given time, employed in the oil-producing countries of the Persian Gulf. And rising rural male out-migration / <sup>may prove</sup> linked to the rising proportion of female-headed house-

holds and rising divorce rate in Morocco. Even where male migration may not be to destinations outside of the country, it can have a profound effect. In Algeria, for example, an oil-producing country, the government "reported that female participation in agriculture more than doubled between 1966 and 1973, primarily owing to male migration, which resulted in an increased importance of female labour in self-managed farms" (United Nations, A/33/238, 1978:22).

In sum, under the onslaughts of major internationally-derived economic trends, customs change and traditions accommodate to new and urgent survival necessities. There is no evidence of any group choosing economic ruin rather than permit a change in the traditional economic role (or non-role) of its womenfolk. And if the survival necessities are urgent enough, women may move almost overnight into tasks considered both "inappropriate" and "incompatible." Thus, women took over the overwhelming share of agrarian production in the Soviet Union, as the result of the horrendous male death rates in World War II, and contributed up to 73 percent of the labor in the heaviest, least mechanized tasks of agrarian field work (Goldberg, 1972). Such work continues to be done largely by women even today - and middle-aged ones at that - as mechanized jobs fall to younger males. And Israeli women fought in combat in the 1948 war - although they did not do so in the subsequent 1956, 1967 and 1973 wars when the military and manpower situations were less desperate. But the less that women control the means of production, the less they can control the conditions of their participation in production. Progress toward full development with equity is thus unlikely to be measured by even improved statistics of female economic activity rates, but rather by the still largely uncollected data on relative female economic resource rates. Thus, it is to the topic of women's reflection in official statistics that we now turn.

#### IV. SEX DIVISION OF LABOR AND SEX DIVISION OF RESOURCES IN RURAL LIFE

In this section we first shall examine the numerous ways in which rural women's work is undercounted and then consider briefly the almost total invisibility which enshrouds rural women's relative resource base.

##### A. Sex Division of Labor in the Countryside: Shortchanging Women's Work by Statistics and Stereotypes.

If all we had to rely on were the national and international statistics about "women's labor force participation," we would have very little idea of what women actually are doing in agriculture. Nonetheless, recognition is slowly growing that rural women's work is undercounted by an unknown but clearly enormous amount in most parts of the world.

To begin with, census definitions of who is economically active tend to be based on the labor force characteristics and fully monetized economies of the developed countries. Attempts to force the very different reality of a given developing country into an ill-fitting standard statistical mold may result in definitions which are of limited usefulness, idiosyncratic, and/or subject to change in unpredictable ways. Also subject to change is census methodology in asking the questions from which the statistics are derived.

Carmen Diana Deere (1977a:6-12) refused to accept Latin American census data that showed that (1) women's role in agriculture is minor or even negligible compared to men's, and (2) furthermore, it had declined steeply vs. men's in recent years. Instead, she conducted her own field research in Peru and critiqued the biases underlying government figures. She summarizes three sources of error:

(1) errors in the categorization of occupation; (2) errors in the criteria employed to distinguish between the economically active and inactive agricultural participants; and (3) errors due to the measurement of self-perceptions rather than actual participation based on the labor time dedicated to the activity (Deere, 1977a:7).

Deere found participation levels and trends that clearly contradicted the official portrait, but she also found how important it was to get beyond the respon-

dent's initial self-definition. Given cultural pressures in Latin America, even for women carrying the brunt of the farm work, "[i]f the first question asked in a census questionnaire is that of the person's principal occupation, peasant women uniformly reply 'their home'" (ibid.). And this is the typical questionnaire format. However, where the interview begins by eliciting questions on a woman's economic activities, the results will be very different, Deere ascertained in comparing two Peruvian censuses in which these two contrasting methodologies were employed.

In the Middle East, cultural definitions of women's appropriate domestic role are even stronger, and thus Youssef (1977) indicates that farmers are generally reluctant to report that their wives or daughters have a gainful occupation. Such men might feel that their self-image and family honor could be compromised by admitting that their womenfolk were economically active.

In short, when demographers in remote capital cities formulate standardized questions that elicit cultural prescriptions rather than practices, the mechanism for creating a cloak of official near-invisibility is set in motion.

The official definitions of economic activities contribute to the incomplete visibility of women's agricultural roles in other ways as well. Strongly oriented toward the monetized sector, they tend to ignore or grossly underrepresent both the informal market sector and the non-market, subsistence sector. And in most parts of the Third World, rural women tend to be disproportionately concentrated in the latter two sectors. A related definitional problem that affects mainly rural women - especially poor ones - concerns "unpaid family workers." In addition to frequently changing the interpretation of this category, some governments may impose strict standards of minimum time requirements spent in farm work for a person to be considered an unpaid family worker, while making no comparable restrictions in establishing other occupational categories. In other instances, "unremunerated family workers" may be partially or wholly eliminated from the economically active population.

The typical dual stress on (a) the monetized and (b) the non-familial types of

economic activities often means a concentration on narrowly defined agricultural production activities that virtually ignores other aspects of the complete agricultural system. Specifically, storage, processing and local marketing are, if anything, even more invisible in national accounts. And since women overwhelmingly predominate in the storage and processing realms, and in many countries in Africa, Southeast Asia and Latin America form a major part of the local marketing system, narrow definitions of the agricultural system once again disproportionately obscure women's roles.

Historically (as we shall see in the next section), women have been more involved with horticultural (hoe) than agrarian (plow) cultivation; more with small animal husbandry than large animal herding; and more with gathering than hunting. These concentrations, continuing to the present day, make for still another form of statistical underenumeration: that based on land-use. Cloud (1978) makes this point forcefully:

Another factor contributing to neglect of women's role in food production is the fact that much of it takes place on uncultivated land - in gathering, small animal production and milk production. Alternatively it takes place in very small plots, in vegetable gardening. It is one of the characteristics of gardening [horticulture] that a great deal of food can be produced in a small space, but this very characteristic tends to work against women. For example, consider this quote, "Cereals are the major crop; many varieties are grown on about 65 percent of the cultivated land...Peanuts and cotton occupied about 25 percent of the cultivated area. Small amounts of manioc, yams, sugar cane and tobacco were produced on the remaining 10 percent of the cultivated land." (Matlock and Cockrum, 1976). Women's crops are invisible in this account of land use. This invisibility may also contribute to the lack of development resources available for some kinds of food production (Cloud, 1978:15, emphasis added).

Above and beyond all this, the seasonality of female participation in agricultural work may also work against a true picture of women's involvement - especially if female seasonality is different than male and the timing of the census falls in a period when women are less active.

But a far more important problem is that of sex stereotyping. Stereotypes depicting women as agriculturally unproductive may be so strong that negative evidence is repressed under most circumstances. I experienced a striking example: In a country best left unnamed, the man who directed agricultural planning greeted with

enthusiasm the author's questions about enhancing female participation in planned agricultural development. "Oh yes, I'm in favor of that - a woman should be made more aware of these things; she should know in which month her husband plants." Yet this very same official was equally enthusiastic in corroborating data from a new field study which I brought to his attention. Once we began discussing the empirical findings detailing that women made up one-half or more of the paid labor force in the principal cash crops of a major region of the country, he was able to change his mental set. He agreed that in those particular crops in that particular region women were indeed important - and, in fact, were becoming more so.<sup>17</sup> The contradiction is easily explained. His generalized image of rural women was as house-bound helpmates. When confronted with specific data that deviated from this picture, he shifted mental gears. His overall approach to agricultural planning, however, relied much more heavily on the generalized image than on the deviating data. And given the strength of the stereotypes and the standardized statistics, deviating data are still sparse and poorly disseminated.

Unfortunately, a new problem may be emerging from some initial efforts to counter this state of affairs. Will new "quick and dirty" estimations of what women are doing prove help or hindrance? An example is the effort by Fagley (1975) to gather data on "rural women as food producers" for his church-related organization. His informants were "concerned people in several intergovernmental and non-governmental agencies...those familiar with rural conditions in Asia, Africa and Latin America" (1975:1). He is very aware of the limitations of his data base. However, due to the increasing pressure to get some kind of assessment of female agricultural participation beyond that of what are becoming recognized as/limited and/or distorted government statistics, reports such as Fagley's are entering the "women in development" information network. / <sup>Increasingly, they</sup> <sup>unduly</sup> end up being used (with or without explicit citation) in a variety of reports and publications. To the extent that his original sources were not as knowledgeable as he hoped, and to the extent that his data obscure such

important sources of variation as region and - especially - class,<sup>18</sup> this widespread citing could provide a misleading sense of false comfort among development people that the role of women in agriculture was now being appropriately recognized.

B. Sex Division of Resources in the Countryside: Questions, Not Answers, about Women's Relative Economic Power

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Concerning women's degree of control of resources, there do not seem to be even "quick and dirty" studies. This seems a regrettable lack. In my paradigm of sex stratification, I suggested that although women's participation in production seems to be a usually necessary prerequisite to achieving a fair degree of equality in status and life opportunities, mere work, in and of itself, is not a significant predictor of such equality. (After all, slaves work too - and workers and peasants have not yet inherited the earth.) Rather, I proposed, the most important determinant of women's relative equality in a wide variety of dimensions was their relative economic power, as compared to that of the men of their group or class. The findings of a pilot study on a sample of 61 pre-industrial societies strongly supported my hypothesis (see, e.g., Blumberg, 1974; 1978; 1979).

Given the almost total lack of information about what appears to be a (if not the) crucial determinant of women's relative position in their group, it is not surprising that this factor is almost invariably ignored in development planning. Yet where women do not stand to gain from a program - or even find that it undermines the resources traditionally under their control - they will be at best unwilling and at worst obstructive participants in the project. Reading between the lines of much of the literature on the failure of development projects, one is impressed by how often the negative results seem tied to an insensitivity to the basic question, "who benefits?" And all too rarely are the beneficiaries the class and/or sex most in need.

Clearly, research on the relative distribution of resources is needed. But, as the social science cliché insists, "all research starts with a question." Here I present two overlapping sets of questions which may provide a preliminary framework

for baseline evaluation of women's relative resources.

First, in my own sex stratification research, I constructed a scale of women's relative economic power as compared to the men of their class/group. Although I used the ethnographic data of the Human Relations Area Files for the study, some version of these questions may prove heuristic in contemporary Third World research:

- (1) What is the relative proportion of the means of production (involving both real and movable property, such as animals) controlled by women vs. their menfolk?
- (2) What is the relative proportion of the fruits of production, distinguishing surplus vs. subsistence production, controlled or allocated by women?
- (3) How did they get their hands on the above via inheritance, i.e., what are their relative inheritance rights for different types of property, as actually practiced in the group?
- (4) What are women's actual rights to accumulate property of different types on their own behalf by routes other than inheritance?

This list bears a number of points of similarity with that proposed by Chaney, Simmons and Staudt (n.d.). They deal explicitly with the issue of women's access to land and water and suggest that information be gathered about the following questions:

- (1) Do women have legal rights to own and inherit land as individuals?
- (2) Does a redistribution of land in a proposed land reform take into account women's traditional access to land as well as their access in the modern legal code?
- (3) Are there grounds for women participating in land redistribution schemes in their own right?
- (4) Under what conditions does the introduction of cash crops spur competition for the land used for food crops?
- (5) What proportion of good agricultural land is held or controlled by women?

If this scheme is broadened to include other factors of agricultural production than land - e.g., animals, access to water, crop-producing trees or other perennials - it would start to address a data lack which ultimately may prove more relevant than the lack of detailed statistics on women's labor in agriculture.<sup>19</sup>

Let us conclude this section with a summary of the data base that seems needed, vs. that which actually exists, concerning women's (a) participation in production, and (b) their relative degree of control of the means and fruits of production.

With respect to participation, full recognition of women's role should include the following (and this list is not presented as definitive or complete):

- by crop/agricultural activity (e.g., poultry-raising)
- by time input over the day, week and complete one-year agricultural cycle
- by class within the area of study
- by village, region or other significant source of variation in cultivation pattern
- by not only production, but also by storage, processing and marketing, i.e., by the various components of the entire agricultural system
- by productivity (i.e., amount of output in absolute terms as well as in relative terms, measured against, e.g., that of males)
- by percent of land use (if only to provide a basis for indicating that women's contribution to agriculture may not be reflected by such a measure vs. others indicated in this list)
- by comparison with existing national statistics
- by comparison with relevant groups, especially the men of the same data base group, or groups of women in other times and places.

With respect to relative resource control, we should know women's proportionate control, vis-à-vis the men of the data base group, of

- the major means of agricultural production, defined broadly enough to include:
- the major sources of input assistance, e.g., extension, credit, training  
for
- the major outputs of agricultural production, both those/use and those for exchange
- the property acquired by inheritance
- the property acquired by routes other than inheritance
- decision-making with respect to the major issues of the agricultural cycle.

To this point, the material on rural women's economic roles in major Third World regions has painted a picture of relatively high labor involvement and much lower, and often threatened, control over agricultural resources. This has been contrasted with the problematic picture of low productivity (and almost no information on property) typically portrayed in national statistics. But more is needed, lest we reify the present and draw a pessimistic conclusion concerning women's potential as both producers and controllers of production. Before turning to policy recommendations based on the immediate needs and prospects of poor rural Third World women today, let us survey our human history. An overview of our evolutionary past can provide a baseline against which to assess the sex division of labor and resources encountered among different groups, classes and countries today. Such a baseline is also relevant in attempting to sort out how much rural "women's fate" owes to biology, socialization, or the social relations of production.

#### V. EVOLUTIONARY OVERVIEW: WOMEN, PRODUCTION AND PROPERTY

This evolutionary overview will be guided by a series of hypotheses derived from my work on a cross-societal paradigm of sex stratification. As indicated above, the central hypothesis of that theory is:

- H<sub>1</sub>: Women's level of economic power (based on their degree of control of the means and fruits of production), relative to the men of their class/group, is the most important determinant of their relative equality in a wide variety of "life options."<sup>20</sup>

Moreover, this notion of women's economic power stresses their control over productive resources:

H<sub>2</sub>: The greater women's relative control over the means of production, the greater their relative control over the fruits of production.

Additionally, concerning sex division of labor, a number of hypotheses are relevant for this article:

H<sub>3</sub>: Women's participation in production seems to be a necessary but insufficient precondition to their achieving a relatively high level of economic power.

H<sub>4</sub>: Women's participation in production, independent of their relative economic power, is not predictive of their relative equality in "life options."

H<sub>5</sub>: Women's participation in production in pre-industrial societies is primarily a function of (a) the degree of compatibility of the activities with simultaneous childcare responsibilities (especially breastfeeding), and (b) the demand for labor relative to the available male supply.

H<sub>6</sub>: The less egalitarian the class stratification system in the society (i.e., its "social relations of production"), the more important (b) above, labor demand, for the prediction of the sex division of labor.

Furthermore, when we consider present-day developing and industrial societies:

H<sub>7</sub>: Sex division of labor is additionally conditioned by (c) the stratification system within the society, and (d) its position within the world economy.

Finally, at the most general level, it is suggested that:

H<sub>8</sub>: The greater the control over the means of production, the greater the control over the impact of development.

With the above hypotheses in mind, let us review women's economic position in the three major types of pre-industrial societies. In evolutionary order, these are foraging (hunting and gathering), followed by horticultural and then agrarian adaptations. Given the major concerns of this article, the evolutionary overview below emphasizes women's participation in production, as well as their relationship to the means of production, and also touches on the issues of fertility patterns and nutrition.

### A. Foraging Societies

Based on the latest archeological evidence, we have had three to four million years of hominid history on Earth. Until some 10,000 - 12,000 years ago when horticultural cultivation apparently first emerged in the Middle East, it seems that all our ancestors lived as hunters and gatherers, in small, flexible and generally nomadic bands. Scattered groups of foragers survive to the present day in some of the world's remotest real estate. Examples include the Mbuti Pygmies of the Ituri Forest in Zaire, the !Kung Bushmen of the Kalahari Desert in Namibia, and the recently "discovered" Tasaday of Mindanao in the Philippines.

The prevalent sex division of labor in foraging societies finds females more involved in gathering and males the main hunters. But despite the publicity still being garnered by "Man the Hunter," it is "Woman the Gatherer" who produces the bulk of the food supply in the overwhelming majority of hunting-gathering societies. According to Lee and DeVore (1968), female contribution to the food supply accounts for 60 - 80 percent of the diet in foraging societies located at non-Arctic latitudes.<sup>21</sup>

22

Concerning the social relations of production, the evidence indicates that they are relatively communal and egalitarian in almost all hunting-gathering bands. In fact, one of the few "universals" uncovered by social science to date involves the pattern of sharing (especially food sharing) found among all functioning foraging groups. Deliberate accumulation of surplus by individuals is concomitantly quite uncommon among such societies. Interestingly, it is among the Australian Aborigines, where it does occur, that women seem to fare worst. There, middle-aged men attempt to accumulate a surplus by having more than one wife. Since women are the main producers and these senior men have access to some of their wives' output - after group subsistence needs have been met - they often use this surplus for prestige-enhancing purposes. The typical foraging

group, however, lies closer to the other end of the spectrum of sexual equality, where women's position seems to be close to equal among the Mbuti and !Kung and apparently completely equal among the Tasaday. The Tasaday, it may be noted, traditionally did no hunting and apparently had no sex division of labor in their gathering activities.

Actually, as a subsistence activity, gathering must be considered as very "compatible with simultaneous childcare responsibilities" (in the language of Hypothesis 5) - provided a woman is not burdened with more than one very small child at a time. It is an activity that doesn't require hard, fast travel, tends not to be dangerous to the safety of any small children in the vicinity, and may easily be picked up, interrupted and then resumed.<sup>23</sup>

Moreover, fertility patterns among foragers are such that most women will not be burdened with more than one young tyke at a time. Family size is surprisingly small (averaging around 2.0 children, according to the evidence of Birdsell, 1968),<sup>24</sup> and child-spacing is remarkably wide (averaging over four years apart, per Whiting, 1968). This wide birth interval seems to result in part from deliberate cultural practices: breastfeeding to age 3 or 4 is typical, and in a number of groups, use also is made of infanticide, abortion, and/or plants with contraceptive properties. But the generally nomadic foraging life style may also play a role: such women tend to have low body fat ratios (despite a high-protein diet), and this seems to inhibit conception (Kolata, 1974).

Furthermore, foragers don't seem to need their children's labor to make ends meet. For example, Lee's input-output analysis of the !Kung in the harsh Kalahari desert revealed an average work-week of well under 20 hours. And only about 65 percent of the group followed subsistence pursuits: children and those over 60 didn't engage in food-getting activities.

Finally,

/if we consider nutrition as "the bottom line," then most foragers are quite successful. Under normal circumstances, their diet is protein-rich, varied and full.

## B. Horticultural Societies

Today, societies based on horticultural (hoe or digging stick) cultivation tend to survive primarily in tropical or semi-tropical zones. They may be found in large parts of sub-Saharan Africa and the Pacific Islands. Others exist on the fringes of more advanced societies in Southeast Asia (e.g., the Montagnards) and South America. Few remain that have not been profoundly affected by the ever-escalating encroachments of the world economy.

Originally, available evidence indicates, horticultural cultivation first emerged in the Middle East perhaps 8,000 - 10,000 B.C. and developed gradually over millenia. Most sources credit women with its development, since it merely adds the cycle of planting to what women were doing already (gathering=harvesting).

Thus, in terms of sex division of labor, horticultural societies resemble foraging groups in that women once again tend to be the primary producers. In fact, in only about one-fifth of the 376 horticultural societies for which Ethnographic Atlas data were available were men the main labor force. But it is significant that the groups with higher male involvement in horticulture tend to be those with the greatest dietary dependence on cultivated food.<sup>25</sup> And these, in turn, tend to be the larger and more stratified horticultural societies.

These strands are woven together by Boserup (1965). She argues that it takes pressure to get people to invest all the labor needed to intensify their cultivation practices. And she identifies two main sources of pressure: staying ahead of population growth and keeping up with the demands of an elite that has developed the power to command labor or extract surplus from the majority. Translating to the language of Hypotheses 5 and 6, although horticulture is at least as compatible with simultaneous childcare responsibilities as gathering, it appears that demand for labor starts to overshadow childcare compatibility considerations as an explanation of the sex division of labor.

Concerning fertility, the implication of the above is that children will

tend to be both more economically useful and more numerous in horticultural than in foraging societies. Evidence indicates that this indeed seems to be the case. But women remain too important in production - and perhaps too autonomous - to become primarily "baby-making machines" in most horticultural groups. The birth interval between children is still quite lengthy, averaging over three years. Interestingly, a substantial number of polygynous horticultural societies resort to long post-partem sex taboos to help achieve the desired wide spacing, but this seems to call on women to make most of the sacrifices in their personal lives.

Still, although the social relations of production are clearly much less egalitarian and communal among horticultural than among foraging societies, it is difficult to generalize about the position of women. In general, there is much greater variation of both women's relation to the means of production and their overall status. At the lower extreme, there are horticultural groups where women form an economically powerless labor force treated little better than slaves (e.g., among the Azande of Africa). At the other extreme are societies with powerful, organized matri-clans of females who control almost the entire economy (e.g., among the Iroquois of Colonial North America or the Minangkabau of Indonesia). The most common pattern, however, is that found in much of sub-Saharan Africa, where polygynous males bring in productive wives (often at a stiff bride price) to farm their patrilineal village's lands. While the women don't own the land (in fact, tenure traditionally is vested in the patri-kin group, not individuals), they have long-recognized use rights to the plots they cultivate. Moreover, they typically control the allocation of much or all of the crops they produce - which usually includes the right to trade surplus production on their own account.

Nutritionally, in most groups it is the woman who is deemed responsible for providing food for her children and her husband. It costs her more labor and time than it does her "sister" in a foraging group, and tends to yield less protein.

### C. Agrarian Societies

Societies based on plow agriculture first emerged in the Middle East about 5,000 years ago and slowly spread over much of Asia and Europe. European expansion and colonization subsequently exported the form to the New World, Australia and New Zealand, and parts of Africa. With respect to women, agrarian societies tend to be the evolutionary lowpoint for both female participation in production and control over its resources.

This is especially so in groups practicing non-irrigated plow agriculture. To generalize, in such societies, women tend to be edged out of production, bereft of any independent control of the means of production, relegated to house and hearth as baby-making drudges (sons strongly preferred), and treated as inferiors politically, religiously and ideologically. Moreover, their non-economic "life options" - as predicted by  $H_1$  - reflect their negligible economic power and tend to be drastically inferior to those of their menfolk. To understand why, we need to further examine the features of agrarian systems.

Let us first explore the historic reversal whereby women lost their traditional importance in production. The reasons for this are complex, and seem to involve, in increasing order of importance, 1) the compatibility of agrarian production with childcare, 2) the demand for labor as a function of the technical nature of plow agriculture, and 3) the demand for labor as a function of the typically highly unequal social relations of production characterizing such societies.

1) First, agrarian work is less compatible with female childcare responsibilities (especially breastfeeding) than horticulture. Agrarian fields are much larger than horticultural garden plots<sup>26</sup> and tend to be farther away. The fact that they are completely cleared (vs. the "cultivated forest" of traditional horticulture) also means that they provide fewer niches to accommodate young children. Moreover, where dry agrarian cultivation involves use of animal-drawn plows, males' greater upper body muscular strength is an advantage.

2) Second, technically, agrarian dry plow cultivation is less labor intensive per unit of ground area (e.g., per hectare) than horticulture - although plow farming does make possible higher total yields. Furthermore, use of the plow all but eliminates one of the main foci of female labor inputs in horticulture: weeding. (The fact that the plow turns over the soil to a far greater depth than the hoe is the main reason.)

3) But the most important factor, it appears, stems from the typical agrarian society's highly unequal social relations of production. Most are class stratified: a small elite has gained control of many of the main means of production. And most, for the first time in human history, contain a significant proportion of surplus labor: no longer does being born into a group guarantee one the right to make a living from the resources found in the group's domain.

It seems to be the glut of male labor that paradoxically pushes women out of production yet keeps them busy producing more such workers (see Blumberg, 1978, Chapter 4). The scenario seems to be as follows: peasants are under pressure to produce more than their household needs and wants, given that the "rent" typically amounts to half the crop (see, e.g., Wolf, 1966). Although the ruling class in such societies generally has mechanisms to prevent too many peasants from establishing separate households as adults and thereby cutting into the surplus extraction goals of the elite, there is nothing to prevent a peasant family from using the labor of its own children in an attempt to stay ahead of the landlord. Children are pulled into productivity from an early age among hard-pressed agriculturalists. And for the first time, women are used - and used up - in frequent and close-spaced fertility.

Under these circumstances, women's work becomes invisible. They may keep kitchen gardens, tend small animals, and spend long hours processing grain crops, cooking, making necessary equipment, and bringing fuel and water. But because their field work tends to be limited to peak seasons, they are viewed as "non-

productive." In short, for the first time, the sex division of labor matches our stereotyped notions of women's (lack of an) economic role throughout history.

The "sexual relations of production" follow suit. With little chance for independent income, and with inheritance and property accumulation rules typically favoring males, women tend to be excluded from control of any appreciable proportion of the means of production relative to their menfolk.<sup>27</sup> Without such access, their "say-so" over household decision-making and even over their own bodies and lives become enfeebled.

So, with respect to fertility, even if they were to oppose the numerous and closely-spaced pregnancies that tend to be their lot, they would have little leverage to ameliorate the situation. But studies have shown that women in such milieux (e.g., rural India) tend to welcome large families. Their children offer these women their only practical road to status, psychic joy and drudgery relief.

Nutritionally, agrarian societies also tend to represent a further erosion of the average person's well-being. This erosion seems more pronounced for females, whose perceived "non-productivity" reduces their claim to family food resources. But in general, the concentration on a small number of field crops provide a little-varied diet based on grains. And often, even where peasant women keep a kitchen garden or small animals, their poverty forces them to attempt to convert this into family income rather than better nutrition. The situation tends to be even worse among the rural landless and the urban "expendables" (Lenski, 1966).<sup>28</sup>

This last point reminds us that agrarian societies are class stratified, and women's relative position (vs. men) varies from class to class. In general, the hard-working women of the peasant class and the even worse off rural landless and urban "expendables" might lead desperate lives, but they tend to have a somewhat more equal position vis-à-vis their menfolk than the women of the elite. It is among the affluent of agrarian societies that such female-secluding and con-

straining institutions as veiling, purdah, foot-binding and even suttee (widow burning, practiced among certain properties castes in traditional Hindu India) reach their apogee.

To summarize the evolutionary overview, in hunting-gathering societies, women have high participation in production and relatively equal control over the means (and fruits) of production. In horticultural societies, women continue to have high participation in production, but, in general (with some spectacular exceptions, such as the Iroquois), less control than their menfolk over the means of production. In agrarian societies (especially among non-irrigated cultivators), women tend to be low in both contribution to production and control over its resources. Overall, in a study of 46 such peasant societies, Michaelson and Goldschmidt (1971) found almost universal female subjugation.<sup>29</sup>

Accordingly, given that every one of today's industrialized societies - both capitalist and socialist - emerged from agrarian antecedents, this female heritage of second class status is significant. It clearly continues to color both the contemporary conception and position of women within these nations. And in the widening wake of the world economy, it has been this agrarian-influenced stereotype of women's "proper" economic role (or lack of one) that has been spread around the globe.

*Handwritten notes:*  
The development  
of the  
world economy  
has been  
influenced  
by the  
agrarian  
heritage of  
second class  
status.