

**Women, Land and Sustainable
Development**

by

Rekha Mehra

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International Center for Research on Women (ICRW)
1717 Massachusetts Ave. NW, Suite 302
Washington, D.C. 20036
(202)797-0007
fax: (202)797-0020
e-mail: icrw@igc.apc.org

INTRODUCTION

Environmental degradation and natural resource loss are widespread, growing problems throughout the world. Topsoil is being lost at the rate of 24 million tons per year. Arable land is declining by an estimated 5-7 million hectares a year and 6 million hectares of new desert emerge every year (United Nations 1991). Tropical forests have shrunk to half their original size and continue to decline by about 17 million hectares a year (Ryan 1992). Meanwhile, the world's population has grown dramatically--doubling to over 5 billion people in the short space of 40 years. According to some estimates, global population is expected to almost double by the year 2050 (WRI 1994). For planners and policymakers seeking to improve economic and living conditions in developing countries, issues of population growth, development, and environmental degradation have become inextricably linked.

There is, in fact, a long-standing and fairly extensive perception among some researchers and policymakers that overpopulation is a major cause of under-development and environmental degradation and that the objectives of economic development and resource protection can best be addressed by limiting population growth (Green 1992; Harrison 1992; Ridker 1992). In this context, women's roles have generally attracted attention for their potential part in fertility reduction rather than in economic growth and development.¹

As both Jacobson (1992) and Sen (1992) have noted, development policymakers have, historically, paid greater attention to women's reproductive than to their productive roles. This emphasis has tended to direct resources for women in developing countries disproportionately into family planning instead of support for women's economic or productive roles or for environmental protection (Jacobson 1992).

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It has also deflected attention away from other critical causes of poverty and environmental degradation such as structural inequalities of gender and class, market failures, and inappropriate policies. Neglected, for example, are the important linkages between women's land rights, development, and sustainability. This paper attempts to draw attention to these linkages by documenting women's restricted rights to land. It shows that these restrictions undermine women's productivity and earnings and their incentives and ability to sustain land and other natural resources. It examines the causes of women's limited access to land and, finally, suggests ways to strengthen women's land rights.

WOMEN'S RESTRICTED LAND RIGHTS

Among the many available definitions of land rights, Agarwal (1994) provides a comprehensive one that highlights the complexities and nuances involved, and is relevant here. She defines rights to land as legally and socially recognizable claims that are enforceable by external authorities such as village-based institutions or the nation-state. Rights include ownership and usufruct or use rights, both associated with varying degrees of freedom to lease, bequeath or sell the land. They may arise from inheritance on an individual or joint basis, from government transfers, purchases, etc., and they may be restricted by specific temporal or spatial parameters.

The basic principles involved in ensuring "security" in land rights or tenure are clarity in use, exclusion, transfer and duration of rights. Although it is often assumed that security involves "ownership," especially individual ownership, this is not always necessary. In fact, community-based ownership, if well-defined and recognized, may afford as much or more security as individual ownership, as long as individuals in the community are clear on their rights of use, exclusion and

transfer, and these are recognized and enforced. It is also often assumed that ownership implies effective control such as over decisions related to land use and disposal, or the disposition of the returns from land. Ownership may actually involve legal restrictions that qualify control, whereas use rights may offer effective control. The point is that there is such a huge variety of land rights and so little agreement on the use of common terminology, especially across countries and governing systems that it is best to understand land and other property rights by examining the way they work within their local settings.

In a gender context, it is important to note that there are differences between the legal and social recognition of land rights, and between recognition and enforcement. For women, these differences are particularly important for the security of their rights. However, the meaning of independent and secure rights to land for women, as used here, includes both in law and in practice. This paper makes an argument based on the assumption that, besides being recognizable and enforceable, an important component of "security" for women, is an "independent" right to land. In tenure systems where land is titled, this would mean that women should have independent title to land. Although joint title with a spouse is preferable to none, independent title would permit women much greater autonomy and enhance their choices--to make their own decisions about land use priorities, to control output, to escape marital conflict, and to have secure access to a means of earning a living in case of marital break up or of a spouse's death (Agarwal 1994). In effect, recognition of women's "independent" right to land would enhance their security. Women could also obtain such independent rights within community-based systems where "use" predominates over titles.

An important component of "security" for women is an "independent" right to land.

Few women in developing countries have secure and independent rights to land. In most places, women cannot legally or customarily inherit wealth or property, including land. Nor are they generally permitted to own land in their own right--and when they are, few women actually do. Where women are granted use rights to land, it is usually through the intermediation of a male relative. Control over the use of land is also generally vested in men (Seager and Olson 1986).

Because land ownership data at the national level are seldom disaggregated by gender and are generally categorized by households--which are assumed to be headed by men--it is difficult to obtain a precise picture of the amount of land owned by women. It is possible, however, to derive plausible general estimates of women's ownership of land from the available data. For instance, from the Food and Agriculture Organization's (FAO) estimates of 167 million landless or near-landless households, one can infer that at least that many women are landless or near-landless (Sinha 1984).² The number of landless households actually represents a lower estimate of the number of landless women--since, even in households where men have land, women often do not (Wazir 1985). For instance, a survey in India showed that, although 80 percent of the women interviewed stated they could not plant trees because they had no land, only 16 percent of the sample actually belonged to landless families (Skutsch 1989).

Micro-level studies offer somewhat contradictory evidence by showing that in certain communities in the developing world a significant proportion of women do own land. Rahama and Hoogenboom (1988), for instance, reported that almost a half of the farms in some villages of the Sudanese provinces of Darfur and Kordofan were held by women. Women also held half the land among the Nangudi

Vellalar people of Tamil Nadu, India, in the 1950s (Agarwal 1988). In the state of Negeri Sembilan in Malaysia, Stivens (1985) found several of the largest landholders were women. Extensive landholding by women is, however, quite uncommon; it is generally limited to the few communities that have matrilineal inheritance patterns or that combine matrilineage with matrilocality, which is even more infrequent.³ Moreover, even in matrilineal and matrilocality communities, women do not actually own land (Agarwal 1988; Hirschmann and Vaughan 1983).⁴ Such lands are held communally, rights devolve from mother to daughter, and individuals have the right to alienate property and dispose of it only in special circumstances (Agarwal 1988; Stivens 1985).

More commonly, patrilineal inheritance predominates in developing countries, and women obtain rights to land through men--generally, their husbands or sons. Any rights granted to women are limited to specific uses (and perhaps times) and stem from the need, as in many parts of Sub-Saharan Africa, to ensure that women have land to farm so that they can meet their obligation of providing certain foods for their households. In such cases, women's rights are generally governed by long-standing community-based tenure systems. Such systems, sometimes termed "traditional" or "customary" often coexist with "modern" or state-based systems in which land ownership is registered and recorded in writing. A variety of types of rights can govern tenure relations at a given time or place and, within them, women's rights can vary. Nevertheless, whatever the governing tenure arrangements, in general, women's land rights tend to be restricted--most certainly in practice, if not in principle.

In most community-based tenure systems, land is held communally, and individuals either by themselves, or as members of clan, lineages, or families, are assigned use rights. If, for reasons such as death or migration, the assignee does not or cannot use the land, it reverts to the community. Studies have shown that

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clarity on use, exclusion, and transfer within community-based customary tenure arrangements have succeeded, in many cases, in enabling people to both meet their basic economic needs and to use available resources in a sustainable manner (Brink and Bromley 1992; Cleaver and Schreiber 1992; Horowitz and Salem-Murdock 1987). For instance, community-based practices govern 97 percent of the land in Papua New Guinea and have permitted the sustained agricultural use of the country's highlands for nine thousand years (Panayotou 1993). According to local custom, individual families have rights to farm plots of land indefinitely, but only the clan as a whole can trade these rights. Even with a high population growth rate of 2.3 percent per annum, the highlands continue to be fertile and afford people a standard of living well above many other developing countries. Deforestation, too, is not as widespread as in other parts of the developing world--only 6 million of Papua New Guinea's 46 million hectares of forest land have been converted to other uses. Much of the system's success in fostering sustainable use is due to the fact that the land is controlled directly by those who use it to farm, gather fruit, hunt, and collect materials for clothing, shelter, and other uses and they have a vested interest in maintaining it. They have little incentive to sacrifice future value for current use, as has happened in other parts of the developing world, where distant governments seeking quick revenues or foreign exchange have sold logging rights to firms or individuals with little interest in the future use of forests.

Community-based systems are also often regarded as more favorable to women than state-based systems because they guarantee use rights to both women and men. Such systems are generally associated with predominantly pastoral or agricultural societies that depend, as in Papua New Guinea, on the direct use of

Community-based tenure in Papua New Guinea has succeeded in fostering sustainable use... [because] ... the land is controlled directly by those who use it...and...they have a vested interest in maintaining it.

natural resources for their economic survival. As both women and men are expected to contribute in specific ways to the economic survival of households they are both generally assigned use rights to resources, including land, to correspond with their responsibilities (Collins 1991). Although data on women's resource use rights in community-based systems is limited, the evidence that is available shows that women often *do* have rights that enable them to meet their economic needs and to do so in a sustainable manner.

In an example from Mozambique's Inhaca Island, Wynter (1990) found that, because employment opportunities for the island's rural coastal communities were limited, women's rights to marine resources were critical to provisioning households and ensuring their survival. All women in a village were granted collective rights to an intertidal zone. This shared right ensured some catch every day as compared with an exclusive right to a small strip of sea floor which might result in no catch at all. The productivity and sustainability of marine resources was further ensured by limiting the number of fishers in an area to the number of women in a village, and the women themselves strictly enforced these restrictions. Fishing for a particular species was, moreover, restricted to specific periods. Thus, the system assured women the key elements of tenure security--clarity on use, exclusion, and transfer. But, as is true in many community-based systems, women's rights in the Inhaca villages were still not as secure as those of men; they were less well-recognized because they were, in fact, intermediated by male family members. Wynter observed that this weakness could prove a problem for Inhaca households in the future as the political and economic environment changed. It was likely that women's rights could be completely overlooked, and the basis for their economic survival undermined, even as they became more responsible for rural production.

In fact, because women's property rights in community-based systems derive from their status as wives or wards--i.e., as mothers, daughters, sisters, or widows--rather than in their own right, women often lose their rights when their status within the household changes (Cleaver and Schreiber 1992; ILO 1989; Rocheleau 1988). Thus, women can lose their rights if they become divorced, widowed, or abandoned (Bruce 1989; Pala 1978). In other words, they lose their rights to the use of resources at times when they need them most for their economic survival.

Moreover, whether women acquire land directly through matrilineal descent or obtain use rights indirectly through male relatives, their plots tend to be small, fragmented, and of low quality. In Malaysia, where Stivens (1985) found land ownership by women increasing in a community in Negeri Sembilan in the 1970s, she also discovered that the land transferred to women was mostly poor and unproductive. In southern Ghana, where both male and female lineage members of some groups are in theory entitled to occupy unassigned communal lands, women are discriminated against in practice when the lineage head assigns the land; fewer women obtain land, and when they do, they get smaller and less fertile plots (Date-Bah 1985).⁵

Where women have use rights to land, moreover, they are rarely free to act as independent agents--their rights tend to be restricted and use-specific. They cannot, for example, use their land for commercial purposes. Once again, these restrictions arise because women depend on men to obtain their rights, and generally, their rights to land and other resources vary with, and reflect, the social status of the male members of the household. Women's rights also usually extend only to resources that are of the least commercial interest to the community. Further, although such rights may be recognized and enforced locally, because they

are not legally protected or even well-known outside the local community, they tend to be highly vulnerable to changes in political and economic conditions. Consequently, when broader-based changes occur at the national level that involve changing or redefining land or other property rights, women's rights are often neglected.

Land reform efforts that, in many places, introduced nationwide codes, registered land, and granted titles mostly, although not uniformly, overlooked women. In some cases, women's legal rights improved as happened, for example, with passage of the Hindu Succession Act (HSA) of 1956 in India. It granted equal inheritance rights in property to the daughters, widow and mother of a man dying intestate (Agarwal 1994). Extension of the West Pakistan Muslim personal law (Shariat) in 1962 over most of Pakistan, except the North West Frontier Province, legally entitled women to inherit agricultural property. However, even in countries that have adopted some progressive laws, gender inequalities persist for a variety of reasons. In India, for example, the progressive nature of the HSA is offset by other competing rules designed to prevent fragmentation of agricultural land and preserve some tenancy rights in state laws (Agarwal 1994; Desai 1994). In other cases, social and cultural factors might take precedence over women's property rights or prevent them from being enforced, as will be discussed at greater length below.

In many places that adopted land titling measures, titles were almost always given to heads of households who were assumed to be men. By enabling individual male owners to legally mortgage, sell, or rent their lands, titling programs enhanced security of ownership for men but did not improve women's rights. In some cases, they even caused them to deteriorate as registration and titling programs often retained elements of traditional law that discriminated against women while

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eliminating the few secure rights they had under community-based systems (FAO 1979; ILO 1989; Onger-Hosgor 1983; Palmer 1985; Rocheleau 1988). In much of Africa (for example, in Ethiopia, Guinea-Bissau, and Kenya), women were not given title to land even though they may have had customary use rights to land prior to registration programs (Davison 1988; Oboler 1985; Jacobs 1991; Munyakho 1994). A study in Kenya found that over 90 percent of Luo women depended for their livelihood on land registered in the name of a male relative; this meant that the land could be disposed of without the women's knowledge or consent, leaving female heads of household and co-wives especially vulnerable to dispossession (Palmer 1985).

Research done by the Zimbabwe Women's Resource Centre and Network (ZWRCN) to inform the ongoing investigations of the Commission of Enquiry into Appropriate Land Tenure Systems, show that women's rights to land under the multiple tenure arrangements operating in Zimbabwe in 1994, though varied, were generally restrictive. Women had no legal access to land in communal lands--only 23 percent of women have use rights to land through their husbands. Among small scale commercial farmers, few women own land. In resettlement areas, only 40-60 percent of married women have use rights. Widows have no inheritance rights. ZWRCN concluded that because of the temporary and precarious nature of their land use rights, women "feel insecure" and "have no incentive...to make investments" because such investments would yield benefits for the husband or male children and not for themselves (Chasi 1994, p. 13).

Women were also left out of the agrarian reform process of the 1960s and 1970s in Latin America. In four of 13 countries for which gender disaggregated data were available, Deere (1987) found that women comprised 4-25 percent of beneficiaries because land titles were not given to women but to household heads,

who were assumed to be men, even in households recognized as female-headed, few women were given land (Table 1).

Table 1: Beneficiaries of Agrarian Reforms in Latin America^a

	Reform Initiated, Modified (year)	Beneficiaries (thousands)	Rural Households Affected (percent)	Women Beneficiaries (percent)
Cuba	1959, 1963	260.0 (1963)	70	25 (1985)
El Salvador	1980	74.9 (1983)	12	11.7 (1991) ^b 10.5 (1991) ^c
Honduras	1962, 1975	33.2 (1978)	8	3.8 (1979)
Mexico	1917, 1971	2,890.0 (1971)	69	15 (1985)
Nicaragua	1979, 1981	72.1 (1983)	30	6 (1982) 8 ^d (1984)

^a Data on women beneficiaries were not available for reforms in Bolivia, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, and Peru.

^b Phase I affected properties of more than 500 hectares.

^c Phase III affected those renting land of less than 100 hectares.

^d Sandinista land reform.

Sources: Deere (1987); Fundación Arias (1992a and 1992b).

Recent reforms in China have also overlooked women; with the collapse of rural communes in the early 1980s, land was redistributed primarily among men-- in effect reversing the 1947 agrarian reform, which had given women separate land deeds (*New York Times* July 28, 1992). Agarwal (1994) points out that policymakers in Nepal and Bangladesh who, in recent policy documents have recognized that women should be educated and employed, do not even

acknowledge that women need land despite the fact that the majority of women earn their livelihoods by farming.

International development projects also tend to overlook women's land rights. When irrigation was introduced on a development project in the Gambia, 87 percent of the improved lands were registered in men's names, while only 10 percent were allocated to women--even though women were recognized to be the main rice producers on swamp lands (Guijt 1992). In the Philippines, a project designed to provide incentives to improve management of mangrove forests through the award of 25-year leases on individual plots made the leases available only to male household heads even though women were actively involved in the use and management of the forests (Mehra, Alcott, and Baling 1993).

To sum up, throughout the developing world, the vast majority of poor women (most of whom depend on land for their livelihood) are either landless or have limited and insecure rights to land. This reality has important consequences for sustainable development.

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THE CONSEQUENCES OF WOMEN'S LIMITED AND INSECURE RIGHTS TO LAND

Economic theory suggests that security of tenure, by offering farmers a potential stream of returns into the future, gives them a stake in ensuring its sustainability, and is therefore linked to higher productivity and better land management (Feder and Feeny 1991; Panayotou 1993). By reducing farmer risk and raising expected profitability, secure tenure provides the proper incentive for farmers to use land efficiently and to invest in land conservation and improvements that are closely linked both to productivity *and* long-term sustainability. Where tenure is secure, farmers are more inclined, for example, to

invest in slower-growing tree crops, or productivity-enhancing inputs, or more labor-intensive land conservation practices--thereby raising both productivity and the quality of their land. Where tenure is insecure--because land is untitled or disputed, or there is multiple and overlapping ownership, or rights are unclear--the resulting uncertainty discourages the investments needed to improve land productivity. As investments in land also improve its quality and permit its sustainable use, the failure to invest can have a negative environmental impact.

In an example from Tukurrique, Costa Rica, Bruce (1989) established that the level of investment, and hence the quality of land (an indicator of its sustainability), varied with the level of farmer security. Farmers who had access to parcels of land under varying tenures--ownership, secure use rights, tenancy, and squatting--invested financial and managerial resources roughly corresponding to the extent of security. Thus, on land with secure tenure, farmers grew trees, which are longer-term investments that enhance land productivity and sustainability. On less secure holdings, they continued to grow annual food crops, which undermine soil quality. Comparing the performance of squatters on state land (insecure tenure) and titled farmers (secure tenure) in Thailand, Feder et. al. (1988) found that the latter had a larger volume of investment, higher likelihood of land improvements (contributing to its sustainable use), more intensive use of variable inputs, and higher output per unit of land (cited in Panayotou 1993). In many parts of Africa, farmer reluctance to invest in planting trees on land with insecure tenure is a critical bottleneck to the adoption of protective alley farming techniques that limit soil erosion in fragile agroecologies.

There is no reason to think that women farmers respond less rationally to negative economic incentives than their male counterparts. The evidence suggests

that insecure tenure undermines women's, as it does men's, incentives for long-term investment in land productivity and conservation. The effects may even be more pronounced for women than men farmers: in the cases of productivity and returns from farm labor, the effects may be stronger for women than for men because women's access to credit and other resources and services needed to enable longer-term investments is more constrained than men's. For many of the same reasons, the effects on environmental degradation also may be stronger for women than for men. They may be compounded because women, especially in Africa, more commonly grow short-duration food crops that are less sustainable than the cash crops men grow (Dasgupta 1993).⁶ They may also be intensified, as Jacobson (1992) notes, by environmental degradation that increases women's work burdens as, for example, in spending more time obtaining fuelwood because forest cover is declining. Insecure tenure among women may also indirectly contribute to reinforcing women's motivations for having large families by affecting both household availability of natural resources (energy and water) and old-age security.

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Impact on Productivity and Employment

By now it is well known that the majority of poor women in the rural areas of developing countries, through farm and off-farm paid and subsistence production, are key contributors to the economic support of their households. In Africa, it is estimated that 96 percent of rural women engage in farm work and 40 percent of small farms are estimated to be managed by women. In south and southeast Asia, at least 70 percent of the female labor force is employed in agriculture (Jacobson 1992). Women's earnings represent a significant share of total household income, particularly in the poorest households and the growing

number of households that are headed by women. Women's earnings, moreover, are believed to contribute much more directly to family welfare than is men's income. Some studies have shown that more of women's income goes directly to food and children's education. With restricted access to land, however, women are seriously disadvantaged in providing for themselves and their families and in contributing to economic growth and development.

Lack of access to land and insecure rights in land lower women's productivity and, in conjunction with factors such as low education and lack of mobility, limit their employment options and confine them to eking out their livelihoods as best they can, sometimes on lands that are extremely marginal for cultivation. Because women's access to complementary resources such as credit, improved technologies, and extension services are limited, their ability to increase investment in the productivity and quality of their land is limited. Their productivity and conservation ability are, therefore, doubly constrained--by lack of incentives and by lack of resources.

Most constrained are landless women. Because they also lack education and training, and since very often cultural factors and family responsibilities limit women's mobility, they are compelled to seek agricultural wage work or work as tenants on the land of others. Surveys in Bangladesh show that one-half to two-thirds of women from landless rural households work as wage laborers (Mahmud and Mahmud 1989). Wage labor is generally intermittent and poorly paid work: unemployment and underemployment due to seasonality are high, and wages for female agricultural labor tend to be low, both absolutely, and relative to men. In Sri Lanka, for example, average daily wages for women farm workers in the unorganized sector are one-fourth to one-third less than men's wages. The annual real earnings of women agricultural laborers in India were about 70 percent of

male earnings in 1983 (World Bank 1991). Data from the developing regions show that women farm workers earned from 50 to 90 percent of male wages (Table 2).

Table 2: Female/Male Wage Ratios in Agriculture, by Developing Region, 1988.

Region	Ratio
Asia	0.70
Asia, excluding China and India	0.54
Sub-Saharan Africa	0.51
Near East and North Africa	0.57
Latin America and the Caribbean	0.73

Source: Jazairy, Alamgir, and Panuccio 1992.

Women who do have access to land and are able to farm, are often less productive than men. Although women often work longer hours than men in many developing countries, women's productivity and the returns to women's labor is low (Quisumbing 1993). Not only does this undermine household food security but it also reduces total household income and welfare. In many African countries, where women are the main food producers, low and sometimes declining productivity among women can significantly jeopardize *national* food security. A key factor influencing lower productivity among women farmers is the disincentive to long-term investment caused by tenure insecurity. Evidence from northern Sudan shows that social and cultural factors strongly discourage women from even cultivating land they do not regard as their own. When Sudanese men migrated in search of employment in the 1970s, women farmers did not cultivate their husbands' lands because they regarded such investment as risky, given the ease of divorce and the widespread practice of polygamy. They were willing to

incur the short-term risk of both land deterioration and food shortages resulting from not working their husbands' land (Badri 1986).

Women farmers are less productive than men farmers not because they are less efficient, but because they generally farm smaller amounts of lower quality land and have restricted access to complementary resources, new technologies, and adult labor (Quisumbing 1993). An extensive literature exists on how service delivery and access to inputs are skewed throughout the developing world in favor of male producers on better land (Ahmed 1985; Berger, DeLancey and Mellencamp 1984; ILO 1989; Staudt 1982). A review of settlement schemes in Indonesia, Malaysia, Sri Lanka, and Papua New Guinea shows that services were provided only to men (ILO 1989). Households headed by women tend to be most disadvantaged. Studies in Zimbabwe and Botswana show that households headed by women produced less and were poorer than households headed by men because women had less or poorer-quality land and more limited access to farm technologies, services, and markets (ILO 1989). Women-headed households also tend to have fewer available adult laborers and support more dependents with fewer resources.

Women, too, generally have fewer resources with which to purchase productivity-enhancing inputs or to hire labor. A key constraint is the lack of access to institutional credit. Paradoxically, a major reason why women are unable to obtain bank credit is that land is often required as collateral, and women generally do not have title to land. Women are also unable to obtain loans from agricultural cooperatives. Membership is dominated by male farmers, and available credit funds are often targeted to improve the cash crops grown by men rather than the food crops more commonly grown by women. Women farmers are estimated to receive just 10-15 percent of institutional credit available in

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developing countries (Staudt 1982; Fortmann 1982; Knudson and Yates 1981). This pressures them to seek credit in informal credit markets where the cost of borrowing is higher, driving down the profitability of their investment and, hence, their incentive to invest.

In some societies, women's capacity to control and invest their own income has been undermined by recent changes such as land tenure reform (ILO 1989). In Kenya, for example, a land titling program designed to stimulate private investment in land productivity succeeded in enhancing men's control over land and income while weakening that of women--although women were the main cultivators. Because men were given title to land and only title holders received marketing services, women had neither the incentive nor the resources to increase investment in production or better environmental management (ILO 1989).

Environmental Effects

Extensive documentation is available on the damaging environmental effects of land shortages, insecure tenure, and uncertain land rights (Colchester and Lohmann 1993; Cruz et al. 1992; Leonard 1989; Panayotou 1993). Problems include overuse and abuse of fragile lands, shortening of fallow periods, deforestation, and related ecological problems that are the secondary effects of the initial degradation. In the Brazilian Amazon, where it is estimated that 43 percent of the land is owned by large landowners and speculators and only 2.7 percent by small farmers, the continued expropriation of land by speculating landlords contributes to the instability of peasant settlements. Peasant insecurity prevents them from investing in land improvements and perennial crops and undermines the sustainability of the land (Monbiot 1993). Heavily skewed land distribution in

Guatemala, similarly, contributes to environmental degradation. Small farms, which represent 88 percent of the total in Guatemala and occupy just 16 percent of the land area are located mostly in the less fertile highlands. The very small size of small farmer plots barely enables farm households to eke out a living. As 22 percent of farmers are squatters and tenure is insecure for many of the others as well, they are unwilling to take the risks associated with improving the land, including the use of traditional conservation techniques such as terracing, which used to be common practice, but have now been abandoned, resulting in high rates of soil erosion (cited in Colchester 1993).

The root cause of massive migration to Cote d'Ivoire between 1966 and 1980 that raised the forest population 600 percent and resulted in large-scale and irreversible damage to the forests was extensive landlessness in Mali and Burkina Faso (cited in Colchester 1993). In Thailand, where 37 percent of land is undocumented and untitled and another 47 percent is covered by certificates that grant only temporary use, tenure insecurity is an important cause of rapid and widespread deforestation that, since the 1950s, has reduced forest cover from over 60 percent to 20 percent of the land area (Panayotou 1993). In Lesotho, lack of secure and enforceable grazing rights have caused farmers to rush to exploit pasture lands without thought for the future because they feel they have no stake in it. As a result, they have overinvested in livestock, and overgrazing in mountain pastures has caused severe soil erosion (Panayotou 1993).

Panayotou (1993) has shown that insecurity of land tenure, when combined with lack of credit, can have both on-farm and off-farm environmental consequences that interact with declining productivity in a downward spiral. On-farm environmental effects include soil erosion, nutrient leaching, and water-logging resulting from inadequate incentives (and funds) to invest in drainage and

soil conservation practices. The off-farm effects include encroachment on marginal lands and watersheds because inability to maintain yields on existing agricultural lands forces farmers to seek other land. As only "marginal" land is available, productivity declines even more, and so on.

Although there is a great shortage of data on the environmental effects specifically of insecure tenure among women, the material that is available confirms that tenure insecurity contributes to environmental degradation by undermining incentives for long-term investments such as in soil-enriching inputs; labor for soil-protecting terracing, bunding or other conservation practices; and planting trees which also protect the soil. The negative environmental effects of restricted land rights are magnified--in both rural and urban areas--by women's time constraints and lack of access to resources and supporting services.

A study of land use patterns and investment decisions in Ruhengiri prefecture of Rwanda shows growing land scarcity, shrinking fallow periods, and the increasing use of marginal lands for farming (Randolph and Sanders 1988). Farmer investment in land is low, land quality is declining rapidly, and soil erosion is a severe problem. Weakness in women's land rights is a key contributing factor. Although women are the primary farmers, they do not own or inherit land, but--provided they have young children to support--they are granted use rights on male-owned lands. Their holdings are generally small and scattered, with individuals farming up to six different parcels of land. Also, since women's farming roles are not acknowledged, they have virtually no access to institutional credit or extension services designed to improve farmer productivity and ability to manage land. Thus, women lack most of the supporting services needed to prevent degradation.

In order to prevent women from establishing firmer rights to land, their use of resources is carefully circumscribed in some places. This, too, can have deleterious effects on the environment. In one region of Kenya, for example, women neither own land nor are they permitted to plant trees which, by local custom, bestows control over land. In northern Cameroon, some men allow women to grow only short-lived trees such as papayas that prevent them from laying claims to land (Jacobson 1992). Limitations on women's property rights, by preventing them from planting trees that tend to be more sustainable than shorter-duration trees or field crops, can influence their ability to protect land and other resources.

In many parts of the developing world, the pace of deforestation and soil erosion has been accelerated by insecurity due to the decline of common property rights, including limitations on community rights to common lands, and the separation of use and management of common areas. In the 1970s, 90,000 square kilometers of forests worldwide were lost annually--more than one-fourth of them for fuelwood--a critical resource for the poor in developing countries who meet their energy needs predominantly from biomass fuels, where these are available (Myers 1991). In many places, because women are the ones mainly responsible for collecting fuelwood from common lands, growing scarcity is reflected in increases in the amount of time that women spend collecting fuelwood (Agarwal 1986; ILO 1987; FAO 1987). In Bara, Sudan, over a single decade, the time that women spent walking to obtain fuelwood increased from 15 to 30 minutes to one or two hours (Agarwal 1986). By the end of this century, in the Asia and the Pacific region alone, the deficit in fuelwood availability is expected to affect one and a half billion people--or double the number affected in 1980.

Limitations on women's property rights, by preventing them from planting trees that tend to be more sustainable than shorter-duration trees or field crops, can influence their ability to protect land and other resources.

By exacerbating women's time burdens, the growing scarcity of fuelwood contributes to further degradation by reducing the time available for other activities, including environmental protection and maintenance. Time constraints are often cited as reasons why women either discontinue conservation practices or fail to adopt them. In the Caribbean, for instance, these factors have caused the deterioration of irrigation systems, the disappearance of cultivation terraces, and increased soil erosion (van Herpen and Ashby 1991).

On the other hand, in communities in which women have relatively secure rights to land or the use of resources such as wood, fodder, and minor forest products on common lands, there is evidence that women have been quite effective in using resources sustainably. They practice traditional conservation methods such as "managed" fallow, crop rotation, intercropping, and mulching (Jacobson 1992). Because of their particular household responsibilities for obtaining food, fuel, and water, women who get these products directly from natural resources have a vested interest in protecting them, as was shown above in the example from Inhaca Island.

Relationship to Fertility

While the effects of population pressures on landlessness and land degradation are well publicized, the documented effects of the reverse--of land degradation and resource depletion on the motivation of poor households for having more children--are less well-known.

Rural households in poor countries face a scarcity of natural resources (energy and water) as well as of capital. The declining availability of natural resources increases the usefulness of additional family labor (to spend more time fetching water, fuel, and fodder, for instance) and the motivations for having

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additional children (Dasgupta 1993; Jacobson 1992). By contributing to land degradation, land insecurity therefore could have the effect of increasing the demand for children among poor families who experience land insecurity and the effects of degradation and resource depletion and may benefit from the added labor that children provide.

Although there is no empirical evidence on the impact of environment degradation on women's rather than households' motivations for having large families, there is increasing recognition of gender differences in the costs of additional births. Recent evidence suggests that gender differences in the costs of reproduction are much higher for women than for men.⁷ But it is quite likely that the benefits of additional children are also higher for women because women's rather than men's work burdens increase with environmental degradation and resource depletion. If these benefits to women exceed the costs, as is likely, the effects of land degradation on fertility will be no different for women than for households. That is, land degradation will increase rather than decrease women's motivations for large families. According to Jacobson (1992), environmental degradation and resource scarcity, because they increase the demands on women's time, are already contributing to rapid population growth.

In addition, social and institutional factors that regulate land allocation in patrilineal and patriarchal systems also determine women's economic dependence on men. Since women have few rights (including land rights) and little access to resources, they lack the means to acquire economic independence. They may want large families because children, especially boys, provide the only way to obtain access to rights, resources, and status, and because more children provide greater security. Finally, male children represent an important resource for security in old age. This is especially important for women in developing countries, where governments provide few, if any, social services or social security benefits and

women depend on male children to avoid destitution when widowed, abandoned, or divorced (Palmer 1991).

While more research on the effects of insecure tenure among women on the environment, development, and fertility is clearly needed, the available evidence strongly suggests the importance of strengthening women's land rights for demographic objectives as well as to enhance productivity and mitigate environmental degradation. This requires understanding the factors that currently limit women's access to land rights.

BARRIERS TO WOMEN'S ACCESS TO LAND

Women's access to land is limited on the supply side by legal and institutional factors that affect land availability, and on the demand side, by economic, social, and cultural factors that affect women's ability to obtain and retain land.

On the supply side, legal discrimination is the most important factor restricting women's access to land.

Supply-side Factors

On the supply side, legal discrimination is the most important factor restricting women's access to land. Although in most places laws do not prohibit women from owning land, they make it very difficult for women to acquire and maintain control over land. Another important factor affecting land availability is the growing scarcity of arable and common land which is largely due to other underlying factors that include environmental degradation and government policies that facilitate concentration of land ownership among a small number of large landowners. This reduces women's access in two ways. First, it limits women's access to common property resources--a significant restriction for poor women

who depend for their survival on the fodder, forage, and firewood that were customarily available to them on common lands in many countries. Second, while land scarcity limits access of both men and women to individual ownership, because women are disproportionately poor, they are at a particular disadvantage in acquiring land as competition for it intensifies.

Legal Discrimination

Legal discrimination against women's ownership and inheritance of land is widespread throughout the developing world. In the extreme (and relatively uncommon) case, women can be prohibited from holding land. Among the Gaddis of Himacahal Pradesh in India, for instance, women are not permitted to hold land even if they acquired it themselves (Agarwal 1988). More commonly, problems arise because laws governing women's rights to property, land, and inheritance are complex, overlapping, and sometimes contradictory. Modern (state-based or constitutional) laws frequently co-exist with customary and personal laws. In matters that most affect property ownership--marriage, family, and inheritance--modern laws frequently defer to customary and personal laws, often to the detriment of women. In India, for example, personal (generally religious) law prevails over modern (constitutional) law in succession and inheritance matters (Jethmalani 1986). In India under Muslim personal law, women are entitled to inherit half the share of their male siblings (Chopra 1986; Jethmalani 1986). Among the Parsis (Zoroastrians who live in India) on a man's death, his wife and sons inherit equal shares of his property, while daughters inherit half of what sons receive (Desai 1994).

In some countries--for example, Botswana, Kenya, Lesotho, and Sri Lanka--laws actually discriminate against women (Gooneskere 1986; Kaduru 1986; Mamashela 1986; Molokomme 1986). In Lesotho, a woman who marries becomes a

minor. Her husband becomes her legal guardian and he is entitled to administer their joint estate. In practice, a woman cannot control the disposition of property because rights devolve upon male relatives in case of divorce or the death of a husband (Molokomme 1986). In Venezuela and Costa Rica, the wife inherits farmland if her husband dies or abandons her but inheritance laws specifically designate sons, not daughters, as next in line of succession (Deere 1987).

Laws are especially discriminatory regarding women's access to *agricultural* land. In India, for example, women have practically no right to inherit agricultural land (Agarwal 1988). Despite the passage of the Hindu Succession Act (1956), which was intended to improve women's rights, the law has been interpreted so as to deny women access to agricultural land (Agarwal 1994). In some Indian states, laws explicitly exclude widows and daughters from inheriting agricultural land (Chopra 1986). Kenya's Succession Act (1972), intended to provide gender equality in inheritance, fails to do so because agricultural land was left under customary laws, some of which deny women the right to inherit farmland (FAO 1979; Munyabkho 1994).

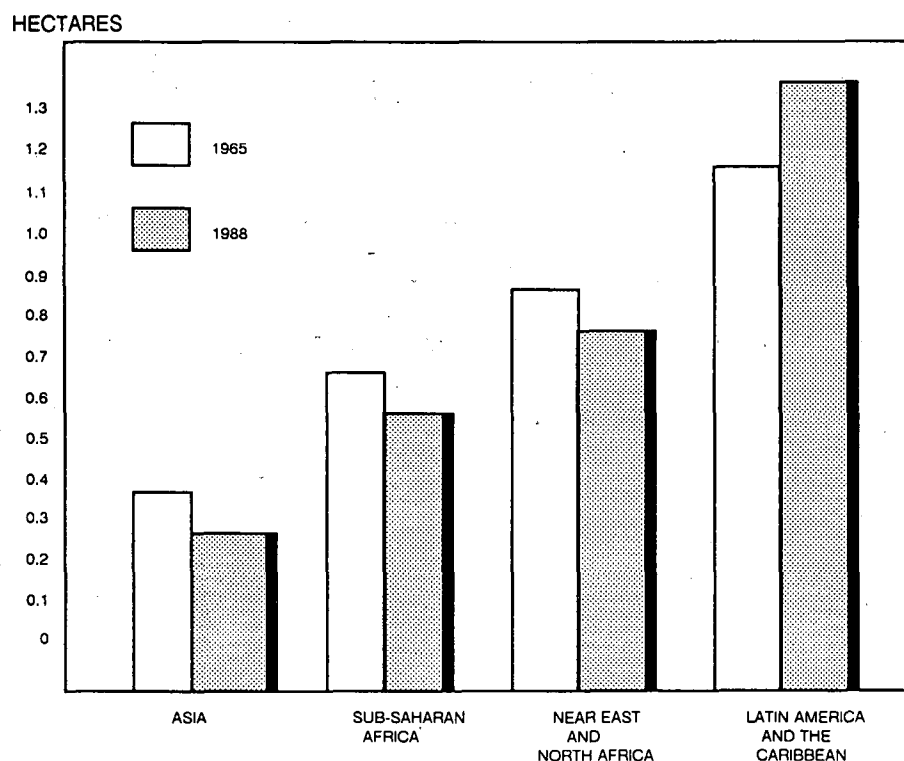
Laws are especially discriminatory regarding women's access to agricultural land.

Even where laws are equitable, women may not know their legal rights. In addition, implementation may be biased, and law enforcement may be inadequate or prejudiced against women. In Kenya, laws technically allow women to own land, yet nearly all land is registered in the names of male elders. And the communities and boards set up to adjudicate disputes are almost completely male (Munyakho 1994). In Bolivia and Honduras, agrarian reform laws explicitly providing for the inclusion of female heads of household as beneficiaries were implemented in such a way as to exclude women. Women simply were not regarded as agriculturalists (Deere 1987).

Government Policies, Environmental Degradation, and Land Scarcity

The problem of women's access to land is compounded by the growing scarcity of arable land. Between 1965 and 1988, as shown in Figure 1, per capita land availability declined in all developing regions except Latin America and the Caribbean. This reflected diminishing land availability in most countries; the few exceptions--including Argentina, Brazil, and Chile--were countries whose frontiers expanded or whose farm population declined. In most developing countries, Jazairy, Alamgir, and Panuccio (1992) found that between 1965 and 1988, arable land per head of agricultural population declined.

Figure 1. Changes in Arable Land Per Head of Agricultural Population, by Developing Region, 1965-1988



Source: Jazairy, Alamgir and Panuccio (1992).

Government policies that promote concentration of land in the hands of wealthy and large landowners are a major factor in the growing scarcity of land. In some cases, governments themselves expropriate vast tracts of land, sometimes retaining them as state lands and sometimes making them available to private entrepreneurs engaged in large-scale farming or commercial logging enterprises (Colchester 1993; Jazairy, Alamgir, and Panuccio 1992). In Brazil, 2 percent of large estate farmers own 57 of the arable land, while 50 percent of all families have no land at all (Jacobson 1992). Government policies are mainly responsible for these inequities.

In other cases, governments contribute indirectly to land concentration as, for example, by providing incentives such as investment grants, tax holidays, and input subsidies to promote commercialization or export-crop production that raise the demand for land among large commercial landholders. When this occurs, it is often at the expense of smallholders (Jazairy, Alamgir, and Panuccio 1992; Lohmann 1993). During the 1960s, the government of Malawi promoted cash crop development by offering incentives such as subsidized credit, seeds, and fertilizers and by transferring lands formerly under customary tenure to large agricultural estates (Jacobson 1992). In Ethiopia, government policies promoting cotton and sugar farming during the 1960s and 1970s caused traditional pastoralists to be pushed out of lowland pastures that were acquired for development of large plantations (Lohmann 1993). In Guatemala, agro-export promotion policies have resulted in highly inequitable land distribution with 2 percent of farms incorporating 65 percent of the land and 88 percent of small farms compressed into 16 percent of the land area (Colchester 1993).

Environmental degradation is another important factor restricting the supply of land. For the past 45 years, agriculture, deforestation, and overgrazing have caused moderate to extreme soil degradation on 1.2 billion hectares (or almost

11 percent) of the world's vegetated surface (WRI 1992). Worldwide losses of arable land continue, with 70,000 square kilometers of farmland--a large proportion in the developing regions--abandoned each year (Fornos 1991). Some regions, for example much of Sub-Saharan Africa, are highly vulnerable to soil degradation and erosion. More than 80 percent of Sub-Saharan Africa's productive drylands and rangelands, totaling about 660 million hectares, are affected by desertification.

The inadequacies of the government policies described above exacerbate environmental degradation, as displaced smallholders are compelled to move to less productive lands and farm them, often causing environmental damage. As smallholders are often squatters on such lands and their tenure is insecure, they have little incentive to make capital or labor investments to improve these lands. In Guatemala, for example, Leonard (1987) notes that rates of soil erosion are escalating because the lack of land security has caused small farmers to abandon traditional conservation practices (cited in Colchester 1993). In Ethiopia, the pastoralists evicted from the Awash valley to make room for cotton and sugar plantations ended up in fragile upland areas that soon became degraded by overgrazing (Lohmann 1993).

Government policies that result in improper management of forest areas is another factor restricting women's access to common property resources and contributing to environmental degradation. In many developing countries, the problem started when colonial governments expropriated vast tracts of land and attempted to protect them through centralized and exclusionary policies that ignored the resource needs of local residents (Berkes and Feeny 1990). Failure to properly protect these areas has made them into *de facto* open-access resources that are more vulnerable to overuse and abuse than when they were used and managed under traditional systems. Yet such policies have persisted into the present. As a

The inadequacies of the government policies... exacerbate environmental degradation, as displaced smallholders are compelled to move to less productive lands and farm them, often causing environmental damages.

result, 74 percent of Indonesia's land area is controlled by the Forest Department, which attempts to restrict access by the 30-40 million people, including women, who either live in forests or depend directly on them for their survival. The 8-15 million people living on the 40 percent of land owned by the Royal Forestry Department are regarded as squatters who do not have legal access to state land (Colchester 1993).

As the supply of arable land diminishes and competition for land intensifies, women are particularly disadvantaged in acquiring land. There is some evidence that this is already happening. Palmer (1991) found that in African countries affected by land scarcity, the quantity and quality of land assigned to women tended to decline first.

Demand-side Factors

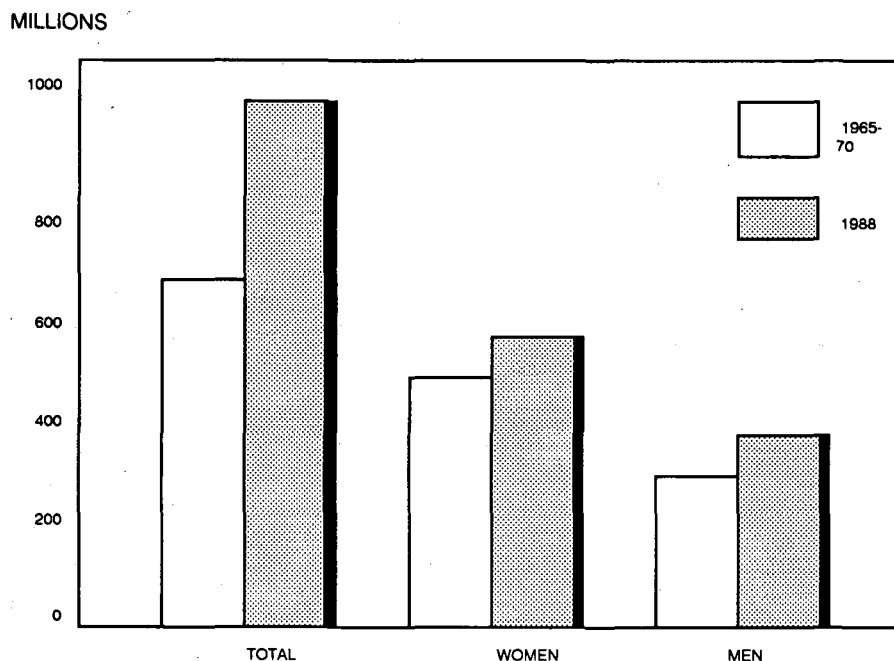
Even where land is available and laws are not unfavorable, women may be unable to acquire land because they are too poor. Their demand for land is also constrained by social and cultural factors that deter them from asserting even limited rights.

Poverty

A key constraint limiting women's demand for land is poverty. Worldwide, more women than men are poor, and the numbers of poor women are growing even faster than those for men--especially in the rural areas of developing nations (Jazairy, Alamgir, and Panuccio 1992). In 1988, an estimated 564 million rural women lived below the poverty line, representing an increase of 47 percent since 1965-1970. In comparison, the number of men living below the poverty line increased 30 percent over the same period (Figure 2).

In African countries affected by land scarcity, the quantity and quality of land assigned to women tended to decline first.

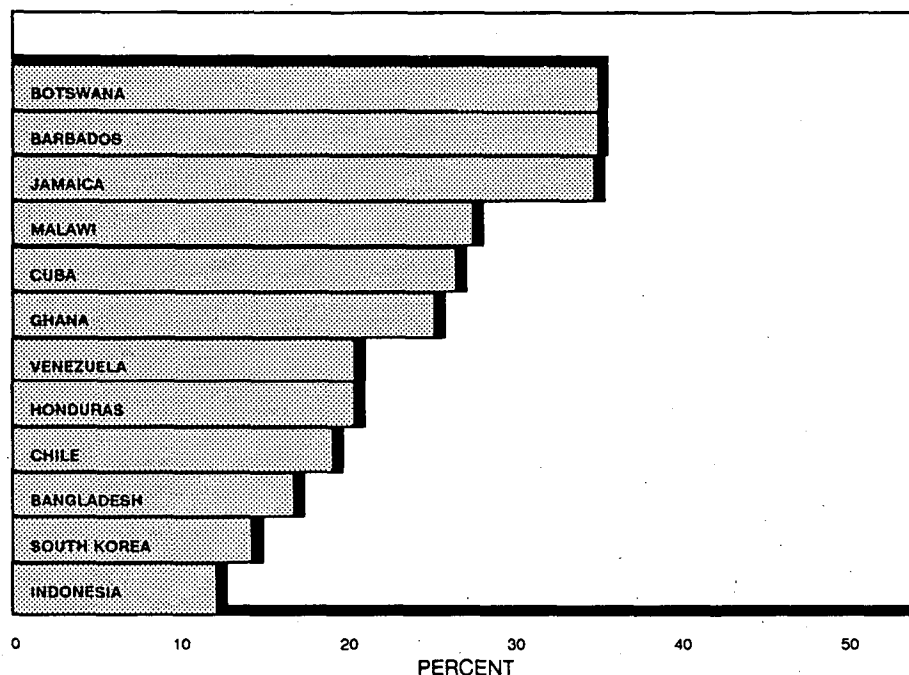
Figure 2. Changes in Number of Rural People Living Below Poverty Line, by Sex, 1965-1988



Source: Based on the Jazairy, Alamgir and Panuccio 1992 study using 41 countries which account for 84% of total rural population of 114 developing countries.

Apart from factors such as economic recession, civil strife, natural disasters, and environmental degradation that contribute to increases in rural poverty, the rise in the number of households solely supported by women is a particularly significant factor explaining the increase in poverty among women (Jazairy, Alamgir, and Panuccio 1992). Figure 3 provides recent statistics on the percentage of households headed by women. These households tend to be overrepresented among the poor. In a review of 60 empirical analyses, Buvinić and Rao Gupta (forthcoming) found that 44 of these studies established that households headed by women were poorer than those headed by men. Researchers agree that the percentage of such households is growing in both developing and developed countries. In Bangladesh, for instance, the proportion of households headed by women as a percentage of all rural households has risen from 5-7 percent to 16 percent over a 20-year period.

Figure 3. Households Headed by Women, Selected Countries in the 1980s



Source: United Nations 1991; Folbre 1990; CASEN 1990; Louat, Grosh and van der Gaag 1992.

As a consequence of their poverty, women are unable to acquire land even when laws permit.

As a consequence of their poverty, women are unable to acquire land even when laws permit. In Kenya, for example, recent laws do not prevent women from owning property, but most women cannot afford to acquire it (Kaduru 1986). This is true in Zimbabwe as well (Chasi 1994). Moreover, poverty prevents women from benefiting from some reforms; for example, women may be unable to take advantage of privatization that entails titling and registration because they cannot afford the costs of registration (Dickerman 1989).

Social and Cultural Constraints

Women may also be prevented from asserting land rights by generally accepted social and cultural values. In India, for example, women are conditioned by custom to accept the idea that sisters should not 'deprive' brothers of property (FAO 1979). Although women are permitted to own property in Zimbabwe,

Burkina Faso, and Cameroon, customs and tradition continue to save land ownership in these countries for men (ILO 1989; Rodda 1991). In Wadi Kutum, Sudan, where a titling scheme registered most of the land owned by women in men's names, the women did not protest because, customarily, they were not permitted to conduct relations with the state--long considered a male domain (Rahama and Hoogenboom 1988). Because of their gender-biased socialization, women themselves often resist change. A study in India found that two out of three women were against girls receiving a share equal to boys in parental property.

Customs such as exogamy (marriage outside a specific group) and patrilocal residence (living with or near a husband's relatives) that require a married woman to give up her natal residence pose important constraints on women's ability to claim land rights. Particularly if her marital residence is far from her natal residence, a woman might find it difficult to manage inherited natal property. Under such circumstances, it is more convenient for women to forego land rights. This can pose a particular problem in communities with matrilineal descent and exogamy.

Lack of Status and Power

Because they lack status and power within the community, women are often unable to exercise the limited land rights they do have. Even though modern bilateral inheritance laws grant women rights to land, women's claims to land under these laws are strongly resisted or circumvented by male relatives. Women are often encouraged to relinquish their claims to land in favor of their brothers. When women balk, they are subjected to litigation, threats, harassment, beatings and, in extreme cases, murder by male relatives (Agarwal 1988). Similar situations have been documented in Egypt and Bangladesh, where laws allow

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situations have been documented in Egypt and Bangladesh, where laws allow women to inherit property. A woman's natal family will provide her with security only if she relinquishes her right to inheritance in favor of her brothers. In other words, in many countries, a woman must give up her inheritance rights, and in some cases even the right to visit her parents, in exchange for protection by her brothers in other matters (FAO 1979; Onger-Hosgor 1983).

Because women lack political power, they generally are unable to seek and obtain support for their rights in court. In India, for example, local *panchayats* (village governments) support families in pressuring daughters to sign away their shares of land in favor of their brothers. Local officials simply do not enforce women's land rights (Agarwal 1988).

It is important to note, however, that women have not always passively accepted their lack of land rights. Nor have they let their inferior economic, political, and social status deter them from expressing their discontent and demanding their rights. At various times, they have taken collective action to demand land rights. In Malaysia in the 1950s, when fundamentalist Muslims challenged the matrilineal descent system of the community in Rembau, in Negeri Sembilan state, the women demanded that clan chiefs and the women's husbands defend their land rights (Stivens 1985). In India in the late 1970s, landless women in the state of Bihar joined with men in the Bodhgaya movement to demand ownership of the land they cultivated that was being illegally held by a religious institution. The women also demanded that their land rights be recognized independently from men, so that they would no longer be vulnerable and powerless in their marital relations and could ensure their future security (Agarwal 1988, 1994).

RECOMMENDATIONS: STRENGTHENING WOMEN'S LAND RIGHTS

This paper has shown that despite women's important stake in using land (and other resources) sustainably women's restricted land rights, combined with lack of access to other productive resources, hinder them from enhancing their productivity, overcoming poverty, reducing their workloads, and managing their resources more sustainably. Yet donors and policymakers have paid relatively little attention to these important linkages between women's restricted land rights, development, and sustainability. Given the growing urgency of environmental and resource problems, and the sluggishness and skewedness of economic development, a significant change is needed to broaden the focus of development policies and programs to take account of women's *productive* roles, in addition to their reproductive roles. This requires reorienting development policies to support women's economic roles and directing additional resources towards them. An important element of such a policy reorientation is the strengthening of women's land rights.

▼ **End land rights discrimination through legal reform and stricter enforcement**

Wherever personal and customary laws are used to circumvent women's legal right to land, new laws should be enacted to supersede local practices. As long as conflicts exist, there is room for discrimination, and precedence can be given to laws that undermine rather than guarantee women's rights. Since laws governing access to agricultural land are most discriminatory, they should be given priority for reform.

Laws should be designed to award women direct and independent access to land, unmediated by male relatives. Where private individual ownership is the norm, women should be given individual ownership. In community-based systems, women should be accorded secure use rights and should be fully represented in the decision-making bodies that allocate land. Women should be accorded full and equal rights to inherit land and other properties.

Stricter measures should be adopted and mechanisms devised to ensure that laws guaranteeing women's land rights are properly enforced. Women should be educated to understand their legal rights and informed of the support available to protect and enforce these rights. This requires strengthening and supporting non-governmental organizations that provide legal aid to poor women.

▼ **Include women in land titling and registration programs**

Because land reform is a highly political issue involving the vested interests of wealthy and powerful individuals and groups, it is often not directly addressed. In many countries, changes in land policy, land registration, and land titling are undertaken at various times, sometimes with donor support. This is now occurring, for example, in countries such as South Africa, Zimbabwe, and Rumania. These changes provide an excellent opportunity for strengthening women's land rights.

Of course, the reform programs would have to begin by acknowledging the equality of women's rights to land and ensuring that they are actually provided equal access in obtaining titles and in inheritance. Donor agencies and governments could provide strong leadership to ensure that ongoing and planned titling and registration programs enable women to obtain land. This will require preparatory work during land surveys and assessments to determine women's

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landowning and use patterns. Information will be needed both on women's traditional economic roles and responsibilities and recent changes in them, so that land rights can be properly determined and assigned. Women will also have to be consulted about their rights and responsibilities. Donors could also conduct policy dialogue with host country governments to ensure that women's land rights receive fair treatment. In this, they could seek support from local women's groups. In Zimbabwe, for example, the ZWRCN is actively engaged in conducting research on women's current land rights and in mobilizing them to press the Commission of Enquiry into Appropriate Land Tenure Systems to strengthen women's rights (Chasi 1994).⁸

▼ **Increase land availability through better policies**

As government policies are partially responsible for causing scarcity and mismanagement, they should be changed to reduce concentration and maldistribution of individually-owned land. A number of policy options are available for reducing land concentration. For example, by imposing taxes on large landholders who idle fertile lands, governments can provide an incentive either to sell land or to use it more efficiently and sustainably. If the land is sold, it could improve access for others, perhaps also for women. Land redistribution to poor people either through changed incentives, as is being proposed here, or more directly through legal reforms, would reduce the pressure from subsistence farmers on the more fragile lands they are currently compelled to farm because they lack access to any other means of survival.

▼ **Institute community management of common property resources and ensure women's participation**

Governments could improve access to common property resources by strengthening the rights of local communities, especially women, to use and manage these resources. Studies have shown that local people, particularly women, have the specialized knowledge, traditions, and self-interest that make them the most efficient managers of the resources they use (Colchester 1993; Panayotou 1993). In some cases, co-management of common property resources by communities and governments may be the most effective strategy for improved management or an intermediate step to exclusive management by local communities (Berkes and Feeney 1990).

Effective measures should be taken to ensure women's full participation in community resource management by ensuring that they have representation on, and a voice in, local management committees. Although numerous studies have shown that women's knowledge of resources and their uses is specialized and different from that of men, women's input is still often ignored, especially at the local level. In addition, male resistance to women's rights is often strongest at the local level (Palmer 1985). Therefore laws may be needed to ensure that women have representation on local management committees.⁹

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▼ **Improve women's access to credit and complementary services**

As this paper has shown, strengthening women's land rights is an important strategy to improve women's productivity and environmental management. But policies that enhance women's access to credit and complementary resources and services are also needed. So are improvements in women's education and health

which reduce women's poverty and enhance their economic and social status and, in turn, strengthen women's rights to land and their contributions to productivity and environmental management.

In addition to better access to land, improving women's productivity calls for better access to credit for the large numbers of poor women who are self-employed in agriculture and microenterprises. Women's access to credit can be improved, for example, by changes in collateral requirements that de-emphasize title to land and allow the use of other assets or substitutes such as group guarantees that have been demonstrated to be useful in lending to women.

Also needed are better access to agricultural extension programs that integrate conservation and sustainability goals, improvements in the effectiveness of extension programs, and better technologies that enhance productivity in a sustainable manner. So far, the cash and export crops grown by men have historically, and in recent years in the process of structural adjustment, received priority in both domestic and external donor programs over the food crops grown predominantly by women. Greater investments should now also be made in research designed to develop appropriate, effective, and sustainable food-crop technologies. Policies should be changed or adapted to raise incentives for sustainable food production, especially in Sub-Saharan Africa.

In addition to better access to land, improving women's productivity calls for better access to credit for the large numbers of poor women who are self-employed in agriculture and micro-enterprises.

▼ **Improve women's access to education and health services**

Greater investments should also be made in girls' education and literacy. Improvements in these areas are closely linked to an individual's adoption of agricultural innovations, increased employment and incomes, and lower fertility as well as to the strengthened self-esteem and status of girls and women.

As women's productivity in agriculture and other occupations and reductions in fertility are closely linked to women's health and nutritional status, greater investments should be made in providing more accessible, integrated, and high quality health services that reduce morbidity and mortality among women. Family planning services should be offered as part of such an integrated health care program in which the emphasis is on enhancing women's reproductive choices and improving their overall health and well-being.

CONCLUSION

Both national governments and donor agencies have a role to play in adopting and implementing the types of policy recommendations suggested here. Government leadership is required for initiating legislative changes and ensuring enforcement of women's rights while donor support is needed for the greater investments required in the areas outlined above.

Donor financial support is particularly important at this time because developing-country budgets, especially in Sub-Saharan Africa, are severely strained by debt repayment requirements and economic recession. In the current context of declining foreign assistance budgets, the objective of strengthening women's land rights should have wide appeal because it simultaneously addresses poverty, environmental protection, demographic objectives, and women's health and social status. Additional resources directed toward each of these areas and the social sectors in general would both benefit women and promote sustainable development.

ENDNOTES

1. Some, but not all, of the explanation for this emphasis lies in persistent perceptions that women in developing countries are not economically active and the fact that most modern contraceptives (except condoms and male sterilization) are designed for use by women.
2. The landless and near-landless are defined as people with little or no land "even to meet the barest minimum needs of the individual" (Sinha 1984).
3. Matrilocal pertains to residence with or near the clan or family of a wife.
4. I have used the term "holding" instead of "owning" because, although "use" confers a wide range of rights and responsibilities on land holders, it does not include the right to dispose of land through sale that is commonly associated with "ownership."
5. Small, fragmented plots, it should be noted, are not always a bad thing. In some cases, they may enable farmers to spread risk by planting different crops in several microenvironments. I am indebted to Carol Dickerman for this insight.
6. Cash crops tend to be perennial tree crops that are generally less damaging (and even protective) of the soil, whereas food crops that are harvested every few months or annually tend to deplete and degrade soils, especially if they are not properly managed.
7. Dasgupta (1993), for instance, calculates that in parts of Sub-Saharan Africa with total fertility rates of seven or higher, the chances that a woman entering her reproductive years will die from childbirth are one in six.
8. It is interesting, however, that the ZWRCN's demands for change ask for women to have joint (not independent) land titles with spouses, and the right to inherit land.
9. The Indian government recently enacted a measure that mandates female representation on local village governing bodies (panchayats).

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