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GENDER, PROPERTY RIGHTS, AND NATURAL RESOURCES

Ruth Meinzen-Dick, Lynn R. Brown, Hilary Sims Feldstein, and
Agnes R. Quisumbing

Food Consumption and Nutrition Division

International Food Policy Research Institute

1200 Seventeenth Street, N.W.

Washington, D.C. 20036-3006 U.S.A.

(202) 862-5600

Fax: (202) 467-4439

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ABSTRACT

Attention to gender differences in property rights can improve the outcomes of natural resource management policies and projects in terms of efficiency, environmental sustainability, equity, and empowerment of resource users. Although it is impossible to generalize across cultures and resources, it is important to identify the nature of rights to land, trees, and water held by women and men, and how they are acquired and transmitted from one user to another. The paper particularly examines how the shift from customary tenure systems to private property--in land, trees, and water--has affected women, the effect of gender differences in property on collective action, and the implications for policy formulation and implementation.

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Ruth Meinzen-Dick
IFPRI

Lynn R. Brown
IFPRI

Hilary Sims Feldstein
CGIAR Gender Program

Agnes R. Quisumbing
IFPRI

1. INTRODUCTION

Property rights to resources such as land, water, and trees play a fundamental role in governing the patterns of natural resource management, as well as in the welfare of individuals, households, and communities who depend on those resources. Policies that shape property rights can play a major role in promoting (or inhibiting) economic growth, equity of distribution, and sustainability of the resource base. If we can understand existing natural resource property regimes, how they are determined, and the role played by policy in that determination, we can begin to devise policies that are supportive of broad-based economic growth, especially in rural areas.

Property rights include far more than titles and pieces of paper specifying "ownership" of a defined piece of land or other resource. They encompass a diverse set of tenure rules and other aspects of access to and use of resources. If we understand property rights to refer to an individual's capacity to call upon the collective to stand behind his or her claim to a benefit stream (Bromley 1991), then property rights describe relationships between people. We would argue that the success of any policy, whether designed to prevent further depletion or degradation of the natural resource, or to enhance the resource base, or to ensure sustainable resource utilization, or to improve household welfare, depends on an ability to successfully anticipate the responses of individuals. Time and again, however, actual responses differ from anticipated responses.

An important reason for this is that the focus of property rights analyses has too often been on the rights held by a household, and the de facto or de jure male household head, without a recognition of how these are differentiated between individuals based on gender, age, or other intrahousehold characteristics.¹ There has been considerable work that describes how gender, *ceteris paribus*, is an important determinant of how rights, responsibilities, and resources tend to be allocated—either within households, communities, or institutions (Poats 1991; Moser 1993, Thomas-Slayter and Rochleau 1995). This does not imply that men's and women's interests are necessarily opposed. There is often a great deal of complementarity of interests, roles, and resource uses. Yet these differences and complementarities are easy to overlook if we use gender-blind conceptual, analytical, and measurement approaches. Because it highlights such complementarities as well as actual and potential conflicts, gender analysis is an appropriate tool to apply to a study of property rights, particularly when the goal is successful policy design.

Given the enormous diversity in property regimes, gender relations, cultural and environmental conditions, it may be heroic—or indeed foolhardy—to assume that we can identify patterns of resource use that apply beyond a specific case. This is especially true if we look beyond a single resource such as land or trees, to the range of natural resources. However, we believe it is at least possible to identify a common and probing

¹Clearly, differentials in property rights do not only occur along gender lines. Other differentials can be observed to occur along class, caste, or age lines, for example.

set of questions that can be used to elucidate the link between gender and property in a wide range of cases. In this way, gender analysis can lead to a better understanding of complexity, and open our eyes to a broader range of shared, complementary, and conflicting rights and uses. Furthermore, comparisons across resources and regions highlight certain common trends (as in the effects of privatization) and bring to light new possibilities, such as the flexible, multiuser tenure systems for trees in some areas, that might also be applied to accommodate men's and women's needs for other resources such as water or rangeland.

The purpose of this paper is to cast a gender-analysis lens on the allocation and determinants of property rights to natural resources. In doing so, we intend to identify critical gender asymmetries in property rights and how these asymmetries affect the efficiency of natural resource use, environmental sustainability, equity of resource distribution, and the empowerment of resource users. The paper highlights broad patterns in how rights are transmitted at various levels, the effects of commoditization and privatization and the implications of property rights for collective action and gender relations. Our paper draws from papers and discussion generated in IFPRI's recent e-mail conference on gender and property rights (IFPRI 1997). Many of these themes are discussed in more detail in Lastarria-Cornheil (1997) on land, Zwarteveen (1997) on water, and Rocheleau and Edmunds (1997) on trees. Our paper concludes with the implications for policies that can improve the outcomes of natural resource use by dealing explicitly with gender asymmetries in property rights.

2. OUTCOMES

EFFICIENCY

One of the basic arguments for attention to property rights is that secure tenure encourages investment in a resource, which leads to higher productivity and efficiency in its use (see Besley 1995; Place and Hazell 1993). But if women are blocked from certain avenues of investment (e.g., in tree planting), or if they know that particular investments and increases in productivity will lead to the loss of their access to land, their insecurity of tenure can be a barrier to productivity. This is more likely to be a factor in areas of Africa (e.g., in The Gambia—see Dey 1981), where men and women have separate land, than on "family" holdings (e.g., in South Asia—see Agarwal 1995). Beyond economic incentives for investment, it is important to look also at women's ability to invest in resource enhancement. Ownership conveys the right to manage the resource (as discussed below under the nature of the rights), and is a major source of collateral for credit. Extension agents often favor landowners, thereby giving them preferential access to information (Agarwal 1995). Without title to the resource, women may therefore be constrained from investing, whether through lack of knowledge or an inability to secure credit.

But looking at these issues through a "gender lens" can also highlight some of the shortcomings of traditional analyses of "efficiency." If poverty reduction is an important goal, we need to look beyond productivity/yield impacts to also know (1) the effect of gender differentials in property rights on the control of income, as opposed to just the

level, and (2) the effect of income control on welfare. For example, should the equivalent of a rupee (or dollar, or kwacha) of cash crop output that goes to the male head of household receive the same weighting as an equal "value" of food crop output controlled by the female head of household? This is especially an issue if alleviating malnutrition is an objective, given that women are more likely to spend a higher proportion of additional income on household food and inputs into child health and nutrition (Quisumbing et al. 1995).

The gender lens also allows us to see a wider variety of uses of the resource, and hence to a more accurate accounting of productivity. Property regimes and resource management systems that maximize output of a single commodity may appear to give the highest returns under conventional analysis, but when we look at the full spectrum of uses, other property regimes may have a higher value of output.² For example, do we only look at the marketed logs as the output of a forest, or at the total value of fodder, fruits, "minor forest products," and kindling as well? Do we consider only the "crop per drop" by measuring paddy output of an irrigation system, or also the fisheries, vegetable gardens, domestic water supply, beer making, cattle watering, and recharge of the water table?

Looking at the broad spectrum of resource use, however, is not without its problems. The maximization of one output from a resource, for example, fruits, may be

²This is related to the broader question of accounting for women's productivity, including both home and market production. See Beneria (1992) and Quisumbing (1996) for reviews of these issues.

in conflict with the maximization of another, for example, logs, and thus hard choices may have to be made. What choices are made depend on the objective to be achieved. Some would argue for market valuation of products. Thus, if logs have a higher market value, then they are preferred and some fruit output may be sacrificed. There may be gender differentials if, for example, logs are marketed by men and fruits are gathered by women and provide a source of income and/or food. In our example, if reductions in child malnutrition were the objective, fruits should receive a higher weight in the decision than logs, despite their lower market value, given the propensity of women's income to enhance child nutritional status. Thus the objective of policy design is a critical factor when selecting a property regime or resource management system recognizing the full range of users and uses of a resource.

ENVIRONMENT

Studying the impact of property regimes on environmental sustainability is extremely difficult. It is difficult to find appropriate indicators of sustainability, more difficult to get data on these, and still more difficult to find data on changes over time.³ Even where this information is available, it is hard to link the changes to property regimes, because there are so many intervening and compounding factors. Is a change in the condition of the range due to the property regime, or to other physical conditions such

³Some researchers are exploring the use of aerial photographs and, more recently, satellite images to track changes in ground cover and forest cover over time. However, the time series is limited, as satellite imaging dates back only to the late 1960s.

as drought or animal disease, or to an economic policy such as raising the return to crop production by reducing taxation? Changes in water tables are especially problematic, because of the difficulty in observing groundwater, and in tracing the interactions between surface and groundwater use.

Despite these difficulties in measurement, property rights affect the time horizon for resource use, and the incentives for conservation, as well as for investment in improving the resource. Without rights to manage the resource or exclude others from using it, it is difficult for users to sustain the resource condition. Full ownership rights, including the rights to dispose of the property through sale or inheritance, are often assumed to provide the strongest incentive to maintain the resource over time (Schlager and Ostrom 1992).

However, private ownership does not necessarily lead to sustainable use, especially if the owners use a high discount rate. Studies of common property regimes (e.g., Ostrom 1990) have shown that norms and rules can have a strong influence on sustainable management, particularly if users are involved in rule setting, monitoring, and enforcement. Pursuing flexible tenure arrangements as alternatives to freehold titles, as suggested by Rocheleau and Edmunds (1997) and supported by others in the Gender-Prop E-mail Conference, would therefore require greater understanding of the formal and informal rules governing particular uses in each location. Particular attention should be paid to women's involvement in the local institutions that make and enforce rules governing resource exploitation.

EQUITY

Improving the equity of resource distribution is a strong explicit and implicit theme in the analysis of gender and property rights. But we should note that definitions of equity vary. Equity is not the same as equality, but is linked to the concept of fairness. An equal, or identical distribution of resources (per person? per household? per hectare of land owned?) may not be seen as equitable, or fair. In game theory, there is a growing literature that searches for fair solutions to various cooperative games that are based on widely accepted axioms (Farmer and Tiefenthaler 1995). Fairness concepts map closely onto concepts in social psychology regarding the effects of parental beliefs about equity in intrahousehold allocation (Engle 1988). For example, the fairness literature's "proportional split" rule is equivalent to the intrahousehold "contributions rule," which implies that resources should be distributed in proportion to the individual's contribution to the household. The "equal outcomes" concept in the fairness literature corresponds to Engle's "needs rule," where more resources are given to the more disadvantaged member of the household (e.g., the weaker child) to bring him or her up to the level of the less disadvantaged member. The equality rule is that of equal split, where each person receives an equal share of the resource.

The relevant fairness concept may depend upon the types of resource, the resource constraints of the household, and the characteristics or values of the resource allocation

(Engle 1988).⁴ Farmer and Tiefenthaler (1995) argue that understanding the relevant fairness concept is important to policymakers because the outcome of government interventions may be affected by the fairness concept of the target group. Indeed, it is possible that the policymakers' concept of fairness may differ from that of the intended beneficiaries. If the intended beneficiaries believe in equality of *outcomes*, for example, an equal split of *resources* by the government may not be popular. This brings us back to the point of local variability: definitions of equity differ from one place to another, one time to another, and even one person to another. But identifying norms of equity is needed in both research and in setting policies.

The second major point is the need to be clear about *both* de jure and de facto equity of access to resources. Formal legal equity of access is important as a goal. Examples of efforts in this regard include Costa Rica's titling to women among the unmarried poor (Tinker 1995a); the new intestate inheritance laws in Ghana, which ensure that some land does go to wives and children upon the death of their husband or father (Awusabo-Asare 1990); and legal provisions protecting women's interests in Thailand's family law (Vandergeest 1996). Nor are these efforts restricted to government policies: Rocheleau and Edmunds (1997) report that in Kathama, Kenya, men are now

⁴In a survey of findings from the psychological literature, Engle and Nieves (1993) found that equal split is more likely in noncapitalist cultures. In more communally organized cultures, such as India and China, both needs-based distributions and equal split of resources are likely to dominate. Equal split is more likely within the family, while contributions rules are more likely to apply outside the household. Women are more likely to follow an equally split rule than a contributions rule.

providing land to unmarried daughters with children, recognizing them as the sole support of their children.

The extent of equity in the actual distribution of resources needs to be examined in addition to the formal legal definitions. Analysis should pay particular attention to the reasons for divergence between de jure and de facto equity. This is of particular importance for program design. For example, acquisition of resource rights through labor contributions ("sweat equity") appears to be a more equitable route than cash purchase or inheritance for resource-poor households and individuals. But this does not always hold in practice. Some irrigation systems in Nepal prohibit women from contributing their labor for system maintenance because of concepts of ritual "pollution." According to Pradhan (1995),

In such a situation, female-headed households have to either find cash to "compensate" for the labour (that they were in the first place denied the right to contribute), or pay some other male labourer to contribute the labour. In some of these systems, untouchables are also not allowed to contribute their labour for the same "purity and pollution" reasons.

The barriers to women's access may not be as explicit: they may also be constrained by time, owing to the additional domestic responsibilities which they bear, from contributing sweat equity to irrigation, trees, or land development projects. Many studies have

documented the long hours spent by women compared to men in productive activities (Brown and Haddad 1995; McGuire and Popkin 1990).

Looking at the complementary inputs required to obtain rights may also shed light on the barriers to equitable access. Often, land titling requires political connections and know-how, as much as cash. Even common property or open access resources may require some private resources to exploit (e.g., grazing lands require cattle, marine fisheries require boats, groundwater requires wells and pumps). Creating a level playing field for women may require addressing these hurdles as much as the formal rules and laws relating to resource tenure.

EMPOWERMENT

Agarwal (1995) defines empowerment as "a process which enhances the ability of disadvantaged ("powerless") individuals or groups to challenge and change (in their favor) existing power relationships that place them in subordinate economic, social, and political positions." Property rights fit into this process in two important ways. One is titling itself. Ownership of a resource contributes to empowerment. Where those with greater wealth can buy out others, it is the former who are empowered and those with lesser means who lose ground (literally and figuratively). A growing literature on intrahousehold allocation shows that increased income accruing to different individuals affects the "sharing rule" within the family (Thomas and Chen 1994). In developing country contexts, this is linked to women's rights to inherit, since inherited assets

(particularly land) are a key determinant of nonlabor income (Quisumbing 1994). This suggests that in societies where women can inherit, their position is stronger within the family. In another example, where landless women can purchase a borehole and sell water in Bangladesh, they are empowered (see Koppen and Mahmud 1995). Timely and appropriately structured credit was enabling in this instance.

The second source of empowerment is the organization and support of women's groups to attain rights, whether ones to which they are already entitled or ones that need to be established. In describing the complexity of land, tree, and other resource rights, Rocheleau and Edmunds (1997) make a strong case for (1) the value of making visible at the local level what the distribution of use and ownership rights actually is and (2) the benefits to women of their local political empowerment. Here attention is more to use rights than ownership rights. Working collectively, women are often better able to gain rights where they can most benefit and by means that they construe to retain the complementary nature of their and their families' livelihoods.

3. NATURE OF THE RIGHTS

Any analysis of gender and property rights needs to look beyond who holds legal title. For land, water, or trees, we need to look at complex bundles of rights held by different people, rather than a single "owner" of any given resource unit. The rights to access, withdraw, manage, exclude others from the resource, and to transmit or alienate rights all must be considered (see Schlager and Ostrom 1992). The overlapping categories of use have been examined more extensively for trees (see Rocheleau and Edmunds 1997), but apply also to land and water. Men and women often have rights to use the resource in different ways: for different crops, grazing, and gathering on land; for irrigating, washing, watering animals, or other enterprises using water; for timber, fruits, leaves, firewood, shade, or other products from trees.⁵

Land rights have received the greatest amount of attention. As a fixed and (generally) enduring asset, it is easier to define the boundaries of the resource unit. At the other extreme, water and fishery resources are inherently mobile and transitory. Rights are usually defined in terms of access to and use of water over time, rather than ownership of a particular unit of water. However, the source of water—local streams, irrigation systems, boreholes or other single point sources—will affect its accessibility and the kinds of rights "available." Its fungibility does not necessarily constrain its use as an asset, as in the Bangladesh case where women's groups, often made up of landless

⁵Although rights to access but not withdrawal from the resource are rare, Kendrick (1996) provides an example of women needing coastal areas to dry fish, a case in which rights of access can be very important.

women, own boreholes and sell the water to users (Koppen and Mahmud 1995). Water rights have often been poorly defined, and actual distribution patterns often differ from formal allocation rules. Water rights are also often tied to responsibility for maintenance of water conveyance infrastructure.

Tree rights are similarly often tied to responsibility for planting and tending the trees. What is a tree and the nature of the production of the tree is directly affected by management—where planted and whether and how it is pruned. For instance, in western Kenya, where women can use bushes but not trees, judicious pruning keeps a woody species a bush (see Rocheleau and Edmunds 1997).

In many cases, there are strong links between land, water, and trees. Water rights are often accorded based on ownership of irrigated or riparian land near rivers. Rights to land may be obtained by either planting trees (where trees are scarce), or clearing trees (in forested areas). The latter example illustrates another connection: control over physical resources is often related to control over labor. Hence, men who control land may also control women's labor, and the ability to mobilize labor may be necessary as a "buy-in" to gain rights to certain types of property. On the other hand, Otsuka (1995) hypothesizes that in Ghana, the increased labor requirement of cocoa farms, which is met by women's labor, is leading to greater symmetry of property rights between men and women. This can be thought of as indirect sweat equity, driven by higher demand for women's labor, and the need to give them incentive to work on the land. The extent to which "sweat

equity" requirements affect women's ability to gain property rights merits greater attention in both research and policy or program design.

Over a long time horizon, direct property rights to land, trees, and water can be thought of in a hierarchical or nested fashion—trees, land, water. In many cultures clearing land of trees (in forested areas) or, conversely, planting trees (in open areas) can establish or reinforce land rights. Often the establishment of land rights confers the rights to other resources on the land, such as water. Other direct paths to land rights include inheritance, cash purchase, and state legislation or political process, including land allocations by village chiefs or elders. These paths apply particularly to land that would never have supported trees but also to land that may have been cleared of trees several generations ago. Direct paths to water rights independent of the land right are cash purchase and sweat equity or other investments in the infrastructure that controls water.

There are thus a number of pathways for acquiring and transmitting property rights, including (1) market purchases; (2) inheritance, inter-vivos transfers, or gifts; (3) labor or other investment in improving the resource; (4) use over a period of time (prior appropriation or "squatters' rights"); (5) receiving the rights from the state; and (6) membership in a community (especially in communal or common property regimes).

Identifying these pathways to property rights enables us to consider what are the gender implications of each path and the specific barriers women may face under each. Munk-Masden (1995) points out that "On a theoretical level the market is gender neutral, it is not gender but money that decides the power position. But women are not strong

competitors in land markets for cultural and political as well as for economic reasons."

There is less evidence on gender aspects of water markets, but Cleaver and Elson (1995) argue that women will face similar obstacles, especially where "willingness to pay" is not matched by ability to pay.

The pattern of land inheritance is generally male, whether the system be patrilineal through sons, or matrilineal through nephews. Lastarria-Cornhiel (1997) points out how the spread of Islam and colonialism have eroded traditions of female inheritance in parts of Africa. But looking narrowly at inheritance patterns for one resource may be misleading. For example, in rural areas of the Philippines, transmission of land to men through inheritance is balanced by favoring the education of girls (Quisumbing 1996).⁶

The evidence on the gender implications of various types of investment as a basis for resource claims is varied. Tree clearing is almost exclusively a male task in most societies, and thus precludes women establishing a land right. Women are more likely to be involved in tree planting, but it is still largely a male activity. Additionally, in many cases for women to plant trees, they must already have some land right. In some ethnic groups in Ghana, if women plant cocoa trees, it gives the wife rights to land on marital dissolution. Do other forms of "sweat equity" create hurdles to women's acquisition of rights? Certainly the extensive involvement of women in public works projects, both in

⁶By law, both sons and daughters inherit equally from land held under ownership title in the Philippines. However, while sons may be favored in the distribution of tenanted land, girls obtain more schooling. Indeed, a study of five rice-growing villages in the Philippines showed that, among children 18 and older, daughters had higher schooling attainment than sons (9.54 years and 8.53 years, respectively), while sons were slated to receive twice the land to be given to daughters (0.76 versus 0.32 hectares) (Quisumbing 1996).

South Asia and Sub-Saharan Africa, suggests that manual labor per se is not an insurmountable barrier, but the consequences of the manual labor may be high. Female public-works program participants in Bangladesh are among the poorest women and reported that they were unable to take proper care of their children as a result of their involvement (Ahmed and Shams 1994). Where women's nutritional status is already compromised, or at risk, demanding physical labor may have significant negative effects on their nutritional status, as suggested by a Ghanaian study (Higgins and Alderman 1992).

Official policies toward granting rights from the state range from favoring men (as in many irrigation systems—see Zwarteveen 1997) to giving preference to women or women's groups. Even where official policies are gender-neutral in government-allocated rights, women may have difficulty in acquiring those rights (Lastarria-Cornhiel 1997). Limitations to access include money, where legal or illegal administrative payments are made, little knowledge of the public institutions, and distance. Limited access also results from traditional expectations of women's place and behavior that keep women in the private domain.

Social and cultural norms have a considerable effect on women's water rights that are allocated through community membership. There is a tendency to idealize community resource allocation as being very equitable. Indeed, communal tenure systems often provide for all households to have some land (though women's rights may be subordinate to men's—see Lastarria-Cornhiel 1997). The poor depend heavily on

common property resources such as pasture or forests available to members of a community (Jodha 1992), and many communities have norms that no one should be denied access to basic drinking water. But even the use of the commons may require access to other complementary means of production, such as animals to use grazing lands, favoring those with more resources (see Brouwer 1995). Community norms regarding the appropriate status for women may even be the greatest barriers to women's control over resources, especially independent rights to the resource.

The above speaks principally to formal rights of control, such as exclusion, sale, and making land available to others. Women's *access* to resources for their own productive and reproductive activities is more prevalent than their control. The patterns of access are more complex and more nuanced. Community norms, including those of gender relations, interplay with economic opportunity. It is in the informal rights of access where we are more likely to see the flexibility and subtleties that characterize actual practice. In either case, support of women's groups has strengthened women's access. The effect of gender relations on formal and informal property rights suggests that policymakers need to look beyond legal rights, to look at removing gender-based constraints to other services and rights, which combine to limit women's access to property.

4. COMMODITIZATION AND PRIVATIZATION

The shift from customary tenure systems to more formalized private property systems is a strong trend that cuts across land, trees, water, and other resources. In many cases, this is driven by increasing scarcity or value of the resource. As a result, the resource becomes a commodity, and a market develops for rights to the resource (see Lastarria-Cornheil 1997; Zwarteveen 1997). Privatization can refer to two different types of transfers: from the state to groups, or from customary tenure to titling in the name of an individual. While privatization does not necessarily mean an individualization of rights (many of the largest holders of private property are corporations), in many cases the privatization of land, water, and tree rights is accompanied by a transfer of property from the community to individuals. Furthermore, there is often a move to assign all rights to a single holder, rather than having multiple claimants on the resource. While this reduces transactions costs and facilitates market exchange of the resource as a commodity, it cuts off many who formerly had customary access rights to use the resource for the production of goods and services.

What are the implications of this? Women may not be formally cut off from markets per se, but they often have less access to money, political connections, and other resources needed to acquire title. In the process of privatization and reducing the complex bundles of rights into a single unitary right, many women and marginal users lose out. This has been demonstrated repeatedly, as far back as the Enclosure Movement in eighteenth-century England (see Baland and Platteau 1996).

Rocheleau and Edmunds point out that rights to trees are embedded in the question of land ownership. In traditional systems that recognize multiple users and rights, specific rights to or ownership of trees are accommodated. Where land ownership is privatized and land is exchangeable, the traditional rights to trees and their products may be jeopardized as part of the reduction to unitary ownership.

The policy implication is that privatization programs need to be designed so that women can get title, but this may not be sufficient to allow women to intensify production. That requires access to credit and other inputs in support of resource utilization. Limited access to markets, credit, and inputs may be because they are not there at all, or skewed because of normative or legal gender bias restricting women's access. This implies a need for complementary programs to provide credit and legal assistance along with appropriately designed rules.

However, there is also a need to explore alternatives to freehold tenure that allow more flexible use patterns, which can benefit women as well as men. To do this requires good examples of tenure arrangements that accommodate multiple users. Since many of these are customary rather than statutory arrangements, there is a need for more written documentation that could be disseminated to policymakers and others involved in shaping tenure arrangements. Especially important in this regard are examples where the resource or the products of that resource have entered the market, rather than remain subsistence products with more limited demand.

5. LEVELS OF AUTHORITY OVER RESOURCES

A fundamental question with respect to property rights is "who is in charge?," de jure and de facto. What institutions or individuals have the authority to transmit, distribute, enforce, and/or adjudicate property rights? The question applies at four levels: the national policy and administrative level, the local administrative level, the community level, and the individual level. How do institutions at these levels affect resource use and intrahousehold allocation?

National policy on rights to land varies. National laws may provide for registration and titling, inheritance, sanctioning of local custom, and conditionalities on land use. Policy may be said to be "gender neutral," i.e., not specifically indicating who is eligible to own land. The question is: is "gender neutral" good enough? Or is it a case of being "gender blind" to the absence of a level playing field and the differential capacity for access? Where women's rights are not stipulated, they are likely to be overlooked. There is a strong case for national-level action in the form of laws that sanction equity for women or prohibit discrimination against women because it provides a national standard and a right to be fought for. "Progressive laws (and policies) are both a signal of intent about the values a society holds and a means by which grassroots groups and individuals can legitimately fight for social change. The relationship between law and social change is a dialectical one" (Agarwal 1995).

With regard to water, national-level action is most evident in the administration of water systems or irrigation systems, establishing the legal framework for users'

associations, and determining priorities for water use. While most national policy statements give highest priority to domestic water supply, this generally means municipal water supply systems. The domestic water supply of smaller and poorer communities (whether in villages or urban slums) are often overlooked (Vani, Ballabh, and Shah 1995). Informal domestic use of water and women's own irrigated activities can disappear altogether, unless there is effective representation of women and their interests in decisionmaking bodies.

For trees, the predominant national-level jurisdiction is over forestlands and their preservation. The national government's role is manifest in controlling access and use, in order to preserve forest cover. While such environmental preservation is certainly important, Rocheleau and Edmunds stress the desirability of protecting access rights of local communities, especially for gathering activities.

Whatever the equity statements at the national level, it is important to focus on the institutions—national or local—that are expected to implement the policy (Agarwal 1995; Fourie 1995). The Irrigation Department or Forest Service staff who act as gatekeepers may not be trained or sympathetic towards ensuring women's access to the resource. Adjudication of rights may support or undermine national intent. This may be due to favoritism towards men or certain classes because of local custom and power relations, or because of the overall difficulty of access to the national and local administration.

The community level is also critical as governments and development agencies look to user organizations to take on a greater role in the "ownership" and management of

resources, including land, water, trees, wildlife, and fisheries. With respect to land, it may be local units of central government or local elders who make decisions with regard to title to or other rights. These institutions, as well as many user organizations for irrigation systems, have been male dominated, so that decentralization policies have not increased women's access in many cases. However, women's organizations have been particularly important in securing rights to land, water, or trees for a group, even when individual women have had little right to that resource (e.g., Agarwal 1994; Hoskins 1995; Koppen and Mahmud 1995). In any of these community institutions, rules of membership are a key area to look for representation or bias against women (see Zwarteveen 1997).

Where customary or traditional property rights and gender relations are strong, they are likely to dominate the distribution of rights within and around the landscape. Local forms can be followed to introduce a new practice. For example, in Ghana, there are rituals when men make gifts *inter vivos* to wives. An *inter-vivos* transfer is formalized at a meeting with witnesses (usually village elders and members of the extended family) where ceremonial drinks are offered and a sheep may be slaughtered. Rocheleau and Edmunds (1997) point out how at the local level, rights to use different parts of the landscape may be very flexible and responsive to exogenous factor such as drought.

Local norms also play a substantial role in shaping property rights institutions. Rocheleau (1995) and Rocheleau and Edmunds (1997) characterize these as "the presence of omnipresent and pervasive extralegal rules which govern us all." Definitions of

"stealing," generosity, and other values shape the application of formal rights (for example, see Hoskins 1995).

Finally, the individual level is important because individuals hold many rights and, ultimately, make the decisions of how resources will be used. Furthermore, it is individuals that transmit property through inheritance, purchase, and inter-vivos gifts. Variability among individuals needs to be explicitly acknowledged. Not all men or women are the same—in terms of the assets they hold or how they use them. For example, the husband "owning" all household land may place severe constraints on the woman in one household, but not in another. We may try to identify patterns of when this may happen (e.g., based on wealth, culture, education level, etc.), but ultimately institutions are built upon the actions of individuals.

This implies that national policy is necessary, but not sufficient, to improve equity. Policymakers therefore need to recognize local-level practices as a critical filter on the implementation of any policy. Laws and formal programs are important as a statement of commitment by the government and a potential tool for women to claim their rights. Such policies can weight the odds in favor of local equity, but governments are not alone in this enterprise. The actions of nongovernmental organizations (NGOs) can provide a further catalyst, and the way people themselves assert their rights ultimately determines the outcome.

6. COLLECTIVE ACTION

Property rights are strongly linked to issues of collective action. First, the concept of collective action can include communal or collective assent to a particular property rights regime by the group affected. This would cover the situation Rocheleau and Edmunds (1997) describe for Kathama, where there is a complex layering of rights and acceptable practices, flexible under conditions such as drought, which everyone understands and uses. Such norms and practices may or may not work to the benefit of women, but, in some cases, informal practices by women have been effective in securing rights to women that were not part of the formal structure. For example, Zwarteveen describes how in the Chhattis Mauja scheme in Nepal, women were able to use informal mechanisms to get water to suit their needs with respect to timing and costs, both cash and labor.

Second, property rights specify or describe existing relationships between people. Agrawal (1995) suggests that the pattern of particular rights reflects political realities, not the reverse. Where this is the case, collective assent may in fact be the assent of the powerful and the less audible dissent or indifference of the less powerful.

Third, different forms of property regimes (e.g., individual freehold versus common property) require different degrees and types of coordination and collective action. These range from almost none (implied by assent to individual ownership) to tenancy, to mixes of access to land and associated conditionalities, to formal holdings in common. Common property regimes require a high degree of collective action to prevent

deterioration into open access regimes and the "tragedy of the commons." Holding and managing property in common can be a potent bond among people and form a basis for collective action. Even communal tenure, in which property is held by a lineage (i.e., in common for all its members but allocated by a patrilineal or matrilineal hierarchy and operated as parcels held by individuals with usufruct rights) reinforces bonds of family and locality by limiting the rights of "outsiders" (Vandergeest [1996] provides examples of this from Malaysia and Sarawak).

What are the implications of collective action for women's rights over resources (and vice versa)? In many cases, collective action by women has been instrumental in securing rights for women, either as a group or individually. Where women are blocked from holding land individually, they may be able to obtain a parcel for a women's group to use for a collective garden or nursery, for example. In addition, collective action may lead to a change in the rules, permitting individual women to obtain stronger rights over the resource (see Agarwal [1994] for good examples from South Asia). While there is a large number of both NGOs and local self-help groups, an important question in each area is the presence (or absence), shape, objectives, and membership of women's organizations as vehicles for learning more about women's roles and needs and as a potential base for women's asserting their needs.

The other side of this issue concerns the integration of women as rights-holders and decisionmakers into traditionally male-dominated institutions for collective resource management. Zwarteveen (1997) raises this issue for water management, and it comes up

again in Rocheleau and Edmunds' (1997) discussion of trees. Policies of devolution of authority from the state to local institutions for resource management make it all the more critical that the local institutions function. But how does the gender composition of local institutions affect their strength and effectiveness? Male emigration or diversification out of agriculture makes this increasingly important in many parts of the world. A related question is whether women are better off by integrating into existing male-dominated groups, or in setting up their own groups for resource management (e.g., nurseries, social forestry action, etc.). Examples from other arenas tend to indicate that the different roles and responsibilities of women can prejudice their ability to successfully integrate in mixed groups. A food-producer cooperative set up in 1992 in Gbefi in Ghana with grant funding conditioned on 50 percent of the members being female initially had a membership level of 59 percent women. Members were required to provide labor to the cooperative fields, receiving a profit share in proportion to their labor input. However, women's domestic responsibilities prevented them from being able to supply the labor needed when required, lowering their profit share and causing many women to withdraw. By 1995, the number of male farmers exceeded the number of women (Ahenkora et al. 1995).

Groups made up of all men or all women do not necessarily imply homogeneity and the ability of all to participate. A credit program in Mali was targeted to women utilizing group formation as a "collateral" mechanism through peer group pressure to repay. An evaluation indicated that women with preschool children were less able to use

the credit to generate a positive return than those without preschool children (De Groot et al. 1996). Homogeneity of groups' members in terms of the activity or its goal may be more important than gender per se (compare Baland and Platteau 1996). This requires empirical determination, and the lessons from successful and unsuccessful cases to be shared more widely.

7. DIFFERENTIATION AMONG WOMEN

That women cannot be treated as homogeneous does not need to be belabored. Class and caste; land owning versus landlessness; tenant and owner; life cycle stage; where there is polygyny, the marriage order; whether a female head of household or part of a joint or male-headed; and household composition are all sources of variance that may be greater than their common interests as women. Class and power relationships crosscut gender. In Mexico, privatization to individual tenure dominated by the well-to-do has led to the marginalization of poor men as well as women, with men migrating out (Goldring 1996). Ethnicity may be important, as in Ecuador, where indigenous and mestizo women have differential access (Ahlers 1995). Nor, in discussing women's property rights, should we forget urban women, whose position vis-à-vis resources may be analogous to that of their rural counterparts, with safety nets and male support often lacking (Tinker 1995b).

Researchers and policymakers who are unfamiliar with gender issues frequently identify female-headed households as the target for providing benefits or promoting equity. The types of households in a given area need to be observed and questions asked to determine whether or not they are different from one another, controlling for resource level or other factors.

Differentiation among female-headed households can be on the basis of *de jure* versus *de facto* status; on whether or not remittances are forthcoming from absent household members; their status as widows or divorcees; whether they are in a matrilineal

or patrilineal inheritance system; as well as by the sources of variability described above.

Ahlers (1995) cites the examples of well-off widows whose resources allow them the same opportunities for investment and returns as a well-off male household. Whether female-headed households are disadvantaged relative to their peers in male-headed or joint households in each instance should be a testable hypothesis, not an assumption.⁷

Especially important in this regard is the pattern of temporary and/or permanent migration and its effect on local capacity to use a resource. Are men and women equally likely to migrate? Do they migrate for longer or shorter periods, or is migration sequential, with women following men after a number of years, as in Mexico (Goldring 1996)?⁸ Does the outmigration of family members lead to remittances that either reduce incentives to use the land (e.g., Honduras) or provide capital for land improvement? Or is the absence of male labor an important handicap to using the resource; or is the *de facto* (as opposed to *de jure*) status of women managers an obstacle to getting credit?

⁷A review and evidence from 10 developing countries shows that, among the very poor, differences between male- and female-headed households are not sufficiently large to declare that one is unambiguously worse or better off (Quisumbing, Haddad, and Pena 1995).

⁸Migration may also be linked to life-cycle events and family objectives. For example, in Malaysia, women are more likely to make more marriage-related moves than men (Smith and Thomas 1996). In the rural Philippines, young women migrate to cities and make regular remittances to their parents (Lauby and Stark 1988), justifying parents' preferential investment in their education (Quisumbing 1996). There are regional differences in migration patterns as well. In Africa and parts of Asia, the migration of men to cities leaves women in charge of farming. In Latin America, the predominant rural-urban migration flow is composed of young single females in response to growing economic marginalization in the rural areas. Their ability to find unskilled jobs motivates them to migrate to urban areas at a very young age (Crummett 1987). It has been argued that dualistic, bimodal patterns of development, such as those experienced in Africa and Latin America, are conducive to individual migration, while broad-based rural growth, as in the successful East Asian economies, induces family rather than individual migration (Lele 1986).

Given this complexity, "what are women's interests?" becomes difficult to answer. Measuring the sources and levels of variation within a given location often requires exhaustive and expensive surveys, but failure to recognize differentials among women, as well as gender differences, can be even more costly in terms of undesirable outcomes.

8. IMPLICATIONS FOR POLICY FORMULATION AND IMPLEMENTATION

Undertaking analysis of property rights without examining gender asymmetries in rights, responsibilities, and access to resources leads to partial understanding and incorrect conclusions. As important as this may be in research, it is even a more critical problem in policy formulation. The history of development efforts is littered with examples of policies that failed to take into account both women's and men's needs for access to and control over resources. The consequences in terms of wasted resources or negative effects on household welfare and resource use are significant (e.g., see von Braun, Puetz, and Webb 1989).

Just as good technical design of projects requires a thorough analysis of the physical conditions in which the project will operate, so also good socioeconomic design requires understanding the production systems, resource base, distribution of labor, and bargaining power of men and women of different classes. Care should be taken to understand local norms for equity and how resources are distributed in the larger web of production activities and access to benefits. It is also important to determine how effective those norms and practices are for sustaining de facto equity. However, these elements are not static; policy interventions should be expected to change these patterns. Analysis of the rules that govern resource distribution and production systems may help in anticipating how they will change, but there is no mechanistic determination.

When using gender as a variable in policy analysis, it is essential that we not overlook deeper underlying differences. For example, differences between men's and

women's productivity may not be due to their gender per se, but because of other factors such as differential access to education, credit, markets, time, or labor. Unless these differences are also addressed, giving women title to resources will not improve their productivity, nor necessarily improve their access to resources. Projects also need to ensure that there is appropriate infrastructure to support women's exercise of their rights, including legal services and mechanisms for monitoring and sanctioning those who infringe upon their rights. Organizing groups of local women to demand a voice has been an effective alternative (or complement) to such efforts. It is also useful to look for local norms and rules to safeguard women's interests as well as contemporary forces, such as commercialization, that may be undermining these rules.

Community participation does not guarantee that gender asymmetries will be acknowledged and taken into account in project design. While participatory approaches have become increasingly common in development projects, there may be a tension between objectives of involving local organizations in project management, and those of improving gender equity. Many "traditional institutions" are based on inequality in control over resources. Yet creating viable alternative organizations to represent the interests of women and men of different classes requires substantial investment, and a commitment that goes beyond the time frame of most individual projects.

It is nonetheless important to develop policies that attempt to protect or strengthen women's claims on resources. Any program to assign rights to resources (whether through titling laws, privatization of state or communal holdings, or allocation of land

and water in settlement or irrigation schemes) should be checked for overt or implicit barriers to women obtaining rights. This applies in both the design and implementation of programs. Legal systems need to be developed and adapted to assist women in obtaining or protecting their rights. In many cases, this requires moving beyond simple ownership to a recognition of flexible, multi-user tenure arrangement.

Policies designed by outsiders cannot anticipate all potential changes, nor simply legislate equality of access between men and women. As institutions, property rights are influenced not only by policies, but also by the specific history, environmental conditions, norms, and understandings in each society. Changes in property regimes are therefore path dependent—conditioned by the experiences and expectations of men and women in the society (North 1990). Therein lies the richness of diversity and the potential for institutional change.

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