



Women, Men and Trees: Gender, Power and Property in Forest and Agrarian Landscapes

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Summary. — This paper proposes a revision of the concept of property commonly associated with land in analyzing the gender dimensions of tree tenure. Unlike two-dimensional maps of land ownership, tree tenure is characterized by nested and overlapping rights, which are products of social and ecological diversity as well as the complex connections between various groups of people and resources. Such complexity implies that approaches to improving equity using concepts of property based on land may be too simplistic. Rather than incorporating both women and trees into existing property frameworks, we argue that a more appropriate approach would begin by recognizing legal and theoretical ways of looking at property that reflect the realities and aspirations of women and men as well as the complexity and diversity of rural landscapes.

Through a selective review of the literature, particularly in Africa, and illustrative case studies based on our fieldwork, we explore the “gendered” nature of resource use and access with respect to trees and forests, and examine distinct strategies to address gender inequalities therein. A review of the theoretical and historical background of land tenure illustrates the limitations of “two-dimensional” maps associated with land tenure in delineating boundaries of nested bundles of rights and management of trees and forests by different actors. The introduction of gender adds another dimension to the analysis of the multidimensional niches in the rural landscape defined by space, time, specific plants, products, and uses. Gender is a complicating factor due to the unequal power relationships between men and women in most societies. These power relationships, however, are subject to change. Rather than adopting an artificial dichotomy between “haves” and “have nots” (usually linked with men and women, respectively, in discussions of land tenure), we argue that gendered domains in tree tenure may be both complementary and negotiable. If resource tenure regimes are negotiable, they can be affected by changes in power relations between men and women. This idea has important policy implications. In many discussions of tenure, rights are often assumed to be exogenous or externally determined. The negotiability of tenure rights gives policy makers and communities another lever with which to promote a more equitable distribution of rights to the management and use of natural resources. © 1997 Elsevier Science Ltd

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1. INTRODUCTION

The concept of tenure has been complicated—and enriched—by two convergent streams of inquiry and practice over the last decade. The multidimensional nature of not-so-neatly-nested and overlapping rights to and uses of land, water, plants, animals and their products has occasioned a rethinking of theoretical and legal constructs of property. Concurrently, the issue of equity among multiple resource users emerged as a major challenge to environmental, development and resource management agencies. The historical emergence of feminism and concerns over gender inequality in international development has served as a doorway into the social relations of power (both conflict and affinity) that both shape and

are conditioned by the definition, distribution and control of property (whether it be private, public or “common”).

The combination of gender and resource tenure concerns has stretched the tenure question beyond two dimensional maps of land ownership to address multidimensional realities, characterized by social and ecological diversity and complex webs of connection between various groups of people and the resources that sustain them. In this selective review and conceptual framework we outline the “gendered” nature of resource use, access, control and responsibility with respect to trees and forests. We also examine distinct strategies to address gender

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inequalities in this domain. We propose a multiple user approach to the treatment of property in agriculture and forestry research and development that is informed by gender analysis, rather than using gender analysis to "gender-equalize" the existing tenure framework with respect to trees and forests. This approach includes a focus on the interaction between gendered property relations and gendered resource uses, user groups, landscapes, and ecosystems.

2. HISTORICAL AND THEORETICAL BACKGROUND

(a) *A brief history*

Much of the current literature on gender and resource tenure is rooted in the forestry and agroforestry initiatives of the 1980s and their encounter with the complexities of social relations, landscapes and property regimes in forest, agrarian and pastoral communities around the world. In communities from the Amazon Basin to the Sahelian savannas, forestry and agricultural development agencies confronted the need to deal with the distribution of resources between communities and households, as well as the gender division of use, access, management and legal ownership rights within households. In many parts of Africa land tenure reform had been implemented primarily in highly commercialized areas, while the majority of rural communities, particularly in drylands, continued to operate on a combination of "traditional"¹ and "modern" property regimes. These were governed officially by codified "customary" law and statutory law, respectively. The customary law recognized by the state was usually codified by colonial anthropologists or administrators, often at a fixed time, and then maintained as a permanent legal standard.² These codes often applied to combinations of common and private property rights and usually included nested rights of use and access to land and or specific resources. Often these specific resources were located within larger areas with control and/or legal ownership vested in a lineage, clan or other form of extended kin group (Okoth-Ogendo, 1991; Pala-Okeyo, 1980; Rocheleau, 1988a; Agarwal, 1994, 1995). As researchers reviewed the codified "customary law" regulating land tenure, tree use and management and documented the actual practices reflecting rights to trees and forests they encountered the limitations of two-dimensional maps and simple constructs of property. These constructs proved inadequate to delineate the boundaries of the nested bundles of rights (Riddell, 1987; Fortmann, 1985) governing tree use, access and management by a variety of actors.

A considerable clarification of resource tenure also came with the realization that even within seemingly unitary blocks of private property used by "households" there were complex structures and processes governing the gendered division and sharing of resources. The juxtaposition of simple, unitary blocks of land as property, with the complex, gendered systems of tree use, access, responsibility and control alerted forestry and agroforestry field workers, planners and policy makers to the multi-dimensional nature of resource tenure in general, even under private property regimes.

This new vision of multiple and overlapping domains gave rise to new constructs of multi-dimensional "niches" in the landscape defined by space, time, and specific plants, products, and end uses. Occupation of these niches was governed by legal (or otherwise formally codified) property rights, which were determined and/or modified by: historical precedent of use and access; identity; social relations of power (including both conflict and affinity); daily patterns of use and management; and long term investment of labor (Rocheleau, 1988a, b; Bruce, 1989; Bruce *et al.*, 1993). These formal and informal rules were seen to be nested within a power hierarchy or, alternatively, embedded within a moral economy framework. Furthermore, these rules reflected resource, tenure and land use categories that depended on culturally distinct constructions of land use and landscape (Croll and Parkin, 1992; Posey, 1985; Rocheleau and Ross, 1995; Leach, 1994; Carney and Watts, 1990; Fortmann, 1995; Moore, 1993).

The shift of gendered tenure analysis from land to trees and forests challenged the prevailing constructs of gender relations in development circles. Both the liberal and socialist feminist approaches to Women in Development had postulated a polarized, hierarchical gender structure in which some men had land and most women did not (Davison, 1988). As the venue of the gendered tenure discussion moved to trees, forest, crops and animals the constructs had to be reformulated to accommodate complementarity of gendered domains of resource access, use, control and formal ownership (one means of control). Feminist cultural ecologists and field practitioners noted the complementarity of gendered labor, knowledge (Jiggins, 1988) places (Rocheleau, 1988a; Fortmann and Nabane, 1992) and social organizations (Thomas-Slayter and Rocheleau, 1995a, Thomas-Slayter and Rocheleau, 1995b). Given the tenacity of gender ideologies and power relations (Moore, 1988; Jackson, 1993) we suggest a construct of flexible complementarity under uneven relations of power, in which men may exercise their power to define a new complementarity more to their advantage.

While these new understandings of multiple

resource users made for a more realistic appraisal of the situation, they also complicated the understanding and application of resource tenure concepts within forestry and agricultural development, research and policy. The logical outcome of such a project is nothing less than the reinvention of the formal and procedural relations between technology change, tenure, and social organizations.

(b) *Theoretical insights and policy relevance*

Feminist poststructuralist theory has increasingly recognized complexity (Mohanty, 1991), superseding easy dichotomies with visions of multiple poles of identity and shifting force fields of power governing both conflict and affinity among groups of people (Haraway, 1991; Harding, 1991; Watts, 1993; Rocheleau, 1995; Rocheleau *et al.*, 1996). The composition and alignment of affinity groups based on shared interests may change substantially depending on the issue in question, as may the evidence of actual patterns of resource definition, use, access, management and control in local forestry and agriculture. Recent examples from the Rubber Tappers movement in the Brazilian Amazon (Campbell, 1996), the Lacondon Rainforest of Mexico (Arizpe *et al.*, 1993), a social forestry project in the Dominican Republic (Rocheleau and Ross, 1995) and the Joint Forest Management Program in India (Sarin, 1996) all demonstrate shifting alliances within social movements based on gender, ethnicity and wealth.

The encounter with complexity and the embrace of multidimensionality create a much richer and also a far more difficult template for technology change. Theoretical niceties aside, it is not easy to design, let alone implement, a forestry, agroforestry or agricultural project to address economic, environmental and equity objectives within such a complex (and shifting!) tangle of tenure relations. Some development specialists have strongly resisted the inclusion of gender issues, citing the introduction of "overwhelming complexity" into what seemed a "manageable" model of technology and land use change.

In the domain of technology transfer programs the reinvention of the property model as a shifting constellation of interests in a multidimensional domain of resource tenure would seem to require a heroic marketing effort, to say the least. In popular social movements the academic rhetoric of feminist poststructuralism is also unlikely to galvanize support or generate enthusiasm, and even when clarified may be seen as a threat to movement cohesion. But, the fluidity of purpose and identity described by this theoretical school does capture both the daily practice and the long term development of social movements involved in gendered

struggles over tenure. It also reflects the situation of individual women with complex identities and multiple affinities engaged in both daily personal struggles and collective efforts to improve their security of tenure over trees, forests and other resources in rural landscapes. There are many good reasons to further explore this theoretical direction and equally compelling reasons to restate it in simple terms and to clarify the practical and policy implications through maps, sketches and stories, as well as numbers.

The sections that follow trace the progression of gendered resource tenure from land as private property to the gendered domains and shifting terrains that tie everyday farming, forestry and pastoral practice to social constructs of self, society, nature, resources, rights and privileges. The paper also traverses the spectrum from the instrumentalist arguments for gender equity in tenure, grounded in economic efficiency and resource conservation, to the more socially and politically focused arguments couched within the context of a moral economy. In the latter case the tenure dimension of agriculture, forestry and conservation is treated as an instrument of women's and men's empowerment (Agarwal, 1994), rather than the opposite. The paper explores the history and the debates surrounding gendered resource tenure with a strong but not exclusive emphasis on East Africa, where we have observed and discussed the dramatic and visible juxtaposition of distinct tenure regimes with a wide diversity of people in rural communities.

(c) *Gendered tree and forest tenure in Africa*

In this section, we examine three different approaches to the complexity and dynamism of gendered resource tenure regimes: (i) differences in men's and women's rights to own land with formal title; (ii) differences in the spaces and places in which men and women use trees and forest resources and in which they exercise some control over management; and (iii) differences between men's and women's access to trees, forests and their products through several, nested dimensions (i.e. gendered space, gendered access to resources within a given space, gendered access to products of a given resource, and gendered access by season or other measure of time). For each of these conceptual approaches, we discuss a number of issues of both theoretical and practical significance in the study of tenure regimes, ranging from the appropriate scale of analysis to the practical effectiveness of *de facto*, customary tenure. Next, we elaborate a typology of tree and forest resource access possibilities, accompanied by case study material from specific communities in Kenya. We end by discussing the

importance of social relations to the question of resource access and the need to focus on decision-making processes and social organizations as well as fixed and formal rules of tenure structure in assuring both women's and men's access to and control over natural resources.

What emerges from our review of the research of others across the continent and our own experiences in East Africa is a picture of highly complex, often negotiable resource tenure regimes. Women's rights, though frequently tenuous and under pressure from a variety of changes in land use, family composition and household structure, are still substantial. Evolving customary practices have, in some cases, maintained women's access to resources and warrant efforts to protect, enhance or reconfigure customary law into more robust, equitable statutory law and administrative procedures. In yet other situations women have been able to establish independent wealth in land and trees based on acquisition of private land through the market and sale of cash crops such as cocoa (Berry, 1989, 1993; Lastarria-Cornhiel, 1995). In response to this complexity, we recommend a flexible, user-based approach to resource management interventions based on the active participation of all resource users in all phases of program development, including research and planning as well as the implementation of specific initiatives. We argue that flexibility is best achieved, in turn, when: multiple land, water, plant and animal uses are emphasized; renewable rather than consumptive uses of resources are favored; and access and use rights are as carefully codified and enforced as rights of ownership and disposal.

This reorientation in programmatic focus must also be accompanied by changes in legal and administrative frameworks that support women's access rights. Specifically, outside agents could encourage the development of: (i) legal rights and administrative procedures that accommodate multiple uses and multiple users, including women's use and access rights on male private property, community property, and property controlled by public officials; (ii) formal recognition of gathering as a valid land use, particularly in areas bordering national parks; (iii) complementary involvement of men and women in the processing and marketing of particular products from particular land use systems, or land use systems that include a mix of separate products, processing, and marketing activities some of which are already controlled by women; (iv) legal recognition of customary law, revised to restore a balance between men's and women's rights and responsibilities; or (v) procedural reforms to allow women's organizations, and other organizations with a strong representation of women, to participate in the formulation and enforcement of codes and project contracts that protect men's and women's

rights and responsibilities in established, evolving or experimental land use practices. We will return to these recommendations as we describe specific tenure regimes.

(d) *Land ownership and formal title*

Throughout most of Africa, women are much less likely to hold formal title to land than men (Lastarria-Cornhiel, 1995). It has been argued that women's inability to obtain formal land titles puts them in a position of extreme dependence on men with respect to tree and forest resource access. Women may have little control over which crops are grown, where trees are cut or planted, or how fallows are managed, without their own title to land.

For work which is restricted to an analysis of formal tenure alone, women's subordination with respect to tree and forest resource access is seen to rest in their exclusion from formal tenure regimes. The emphasis is on "bringing women in" to these formal regimes as they are presently constituted and evolving. In most African countries, this means encouraging women to seek individual ownership and exclusive rights of use and management (Zwart, 1990). Changes would have to be made in national legislation to encourage the titling of land to women, either as part of a joint husband-wife title if married, or as an individual if the woman is widowed or single.

The focus on land titling often underplays the significance of women's existing resource use and ownership rights as encoded in the customary law of many societies. For example, among Swahili people on the Kenyan coast Muslim women may own cashew trees on lands owned by male relatives. Their rights extend to restrictions on land uses incompatible with cashew production (Fortmann, 1985). Such systems, however, are built on an assumption of continuous occupancy by multiple users embedded within kin groups; they do not accommodate land market practices that treat land as an exchangeable and interchangeable commodity. Women who enjoy access to a variety of tree, forest and rangeland resources across the rural landscape may find their access restricted after formal land titling or land tenure reforms have invested greater powers of exclusion in land owners, whether male or female. Even where formal title is given jointly to a husband and wife, a woman may lose decision-making authority over her former domains on and off farm as the household "heads" take on the full and exclusive responsibility for the management of household land and all the plants and animals upon it.

In cases where privatization of land is already established or well underway, it is important to

assure that women have rights of land ownership as a necessary, if insufficient step in improving their access to trees and other natural resources (Agarwal, 1994, 1995). Policymakers, extension staff and project designers and managers working on such cases should be alert to opportunities to encourage appropriate changes in both national statutory law and various versions of customary law. Ugandan national legislation, upheld by local committees, has defended the rights of widows against the land inheritance claims of their sons in many communities. In a more locally based initiative, fathers in one community in Machakos District, Kenya, have begun to allocate land to single daughters who have had children, in a break with longstanding local practice (Rocheleau *et al.*, 1994a). This change has been sanctioned, even encouraged, by local elders in an effort to make a place in the world for women and children who had been rendered "homeless" and "illegitimate" in the terms of their own culture.³ Outside development agents in such situations could encourage these changes by recognizing and acknowledging the landholdings of single mothers or widows, including their households as a distinct user group for forestry and agroforestry technical assistance.⁴

(e) *Gendered spaces and places*

Another approach to understanding the gendered nature of tree and forest tenure regimes is to focus on the separation of women's and men's activity and authority in space. In other words, efforts should be made to uncover, recognize and reinforce those spaces in the rural landscape in which women exert relatively more control over resource management decisions and from which they are more likely to derive personal benefits. Carney (1988) has shown, for example, that Gambian women often have separate rice fields within "family" landholdings which they can manage, largely independent of their husbands and other male relatives, for their personal benefit. Though lacking formal legal tenure, their customary rights to this land are tenable, and must be dealt with in any attempt to change land use patterns (Carney, 1992). Similarly, Leach (1992) has discussed the development of women's control over swamp rice cultivation in Sierra Leone. In this case, women have taken advantage of a part of the landscape considered undesirable by men to establish gardens for the food crops that supplement rice in the diet and that survive drought conditions when other crops perish.

Women's spaces are not always as easy to identify in the landscape as separate fields might be. They are frequently found in the "in-between" spaces not deeply coveted by men but still quite useful to

women (Fortmann and Bruce, 1988; Rocheleau, 1988b; Leach, 1992). Such spaces could include the bush growing along roadsides and fence lines, the small garden plots next to the house; the interstices above, below and between men's trees and crops; or the "degraded" land found on steep, wooded hillsides or in overgrown erosion gullies. Resources such as fuelwood, medicinal plants, wild foods, and grasses for weaving and thatching are found in these spaces, and are often critical to women's efforts to meet their personal, household, and community responsibilities (Rocheleau, 1991).

In some areas of the continent, the "bush" may also be a place where women enjoy substantial rights to use and manage resources. Until recently, when population pressures and privatization began to affect even the remotest of Africa's landscapes, many of these areas were treated as a commons of one sort or another. As is the case for the "in-between" spaces discussed above, women did not have exclusive rights in these bushlands. They did enjoy, however, well-established use rights, and perhaps even *de facto* management and disposal rights to many of the resources found there (Davison, 1988; Edmunds, 1997).

In contrast to some of the work done on formal tenure regimes, the analysis of gendered space and place focuses attention on *de facto* rights based in customary norms and everyday practices. Interventions are sought at the community and household levels which establish new resources in places already controlled by women, as when exotic fuelwood tree species are planted along gullies or new vegetables are introduced into home gardens. Efforts may also be made to create altogether new spaces over which women have some authority. This is sometimes achieved through the formation of women's groups, which in certain circumstances can gain access to and maintain a measure of control over public or disputed resources more readily than individual women (Zwart, 1990; Chimedza, 1988; Rocheleau, 1991; Schroeder, 1993; Rocheleau *et al.*, 1994b; Asamba and Thomas-Slayer, 1995; Agarwal, 1994). Involvement of such women's organizations in planning and managing project interventions can help to assure that the resources developed through project activities will be available to women.

The attention to customary practice also leads to an analysis of the differences in the way men and women benefit from the products of resource use. In many cases, though women have substantial labor and management responsibilities for a particular resource, men control the disposal and/or marketing of the products of that resource, as well as the distribution of benefits within the household (Tibaijuka, 1984; Chimedza, 1988). This is often the case

when women contribute substantial labor to production of tree cash crops such as coffee, cocoa, citrus and other fruits, fodder shrubs, commercial fuelwood or timber on "household" or "community" fields. Women may do much of the planting, weeding, and harvesting, but turn over the product for sale to their husbands or other male relatives, as in the case of rice in The Gambia (Carney, 1992). Such may also be the case when women are involved in "community" reforestation projects, when women care for nurseries, and transplant seedlings, but men make use of the trees for poles (Rocheleau, 1991). Project and policy interventions can make explicit reference to who disposes of tree products and help women to avoid situations in which their labor is exploited largely for the benefit of others. Outside agents might also encourage the development of new areas of complementarity for men and women in the processing and marketing of specific tree products from particular land use systems in order to improve women's access to product benefits.

By focusing on the household and community scale, the gendered space approach further illuminates the differences among women in interests, rights and responsibilities. Age and, in polygamous households, order of marriage are important factors in determining women's rights and responsibilities under customary resource tenure law. Among the Luhya in Kakamega, Kenya, older widows have significantly greater decision-making power with regard to the planting, care and disposal of woodlot and fencerow trees than do younger widows (Bradley, 1991). Wealth is also a significant factor (Chimedza, 1988). Poor women in particular rely heavily on the tree products in "in-between" spaces in the landscape, as documented in Machakos District, Kenya, which supports recognition of these interstitial spaces in technology design, land use planning and policy (Rocheleau, 1991). In each case, differences among women's access to space have implications for their participation in reforestation projects, the likelihood of project success, and the impact of forestry interventions on their lives.

Finally, research on gendered space has helped us understand better the politics of gendered resources at the subnational level, in specific communities (Carney, 1988; Leach, 1994; Fortmann, 1995; Rocheleau, 1991). Schroeder, working in The Gambia, has shown how women have resisted, both through formal legal proceedings and through subtle acts of sabotage, attempts by male landowners to convert women's lucrative vegetable gardens to orchards and woodlots (1993). Landowners manipulated customary law to compel women to plant trees in their rented garden fields, which eventually shaded out the women's crops and displaced them from the garden sites they had fenced, watered and fertilized with women's project funding and their

own labor. Women in the Kibale forest region of Uganda have documented women's resistance to the conversion of "degraded" hillsides into so-called community forest plantations, largely at the disposal of men, by uprooting or trampling seedlings (Edmunds, 1991).

These political struggles over gendered spaces are carried out most often under the impetus and authority of the local "moral economy" (Scott, 1976), rather than the formal legal system (Moore, 1993; Edmunds, 1991, 1997). Their outcomes therefore depend heavily on personal social relations and the creative interpretation of local histories, values, and ambitions (Fortmann, 1995; Moore, 1993).

While analyses of gendered space are a welcome complement to studies of women's lack of access to formal land ownership, we would suggest that further elaboration is necessary. The trend in land use change throughout much of Africa seems to indicate a steady loss of "bush," as well as many of the larger "in-between" spaces to which women have substantial rights of access today (Croll and Parkin, 1992). Project planners and policy makers might slow this trend by prioritizing nonconsumptive uses of the resources found in these spaces, in most cases to the advantage of women. Recognizing and evaluating realistically the contributions of women's gathering activities to local economies might also make it more difficult to justify the clearing of bushy lands on which women currently rely. These efforts to stem the conversion of bushy lands, however, will not be sufficient in and of themselves to assure women adequate access to the tree and forest resources they need.

Development and advocacy agencies can also reinforce and expand women's rights as users of resources located within the private and community spaces belonging ostensibly to men (Rocheleau, 1988a, 1991; Fortmann and Bruce, 1988; Bruce *et al.*, 1993; Schroeder, 1993). As these "male" landscapes change, they are constantly creating new, albeit smaller "in-between" spaces—scattered patches of uncultivated land; thin ribbons of vegetation separating fields; understories in coffee or cocoa gardens—as well as new categories of resources by type or by value. Broader efforts to improve women's access to separate field, forest, tree crop and garden plots are clearly needed. But, women's ability to assert, and perhaps formalize, their rights to the resources within even these smaller, constricted "micro-frontier" spaces will be of vital importance to them as they try to meet their daily responsibilities.

(f) *Gendered access to nested resources*

Recognizing men's and women's separate spaces

does not necessarily tell us who has what level of access to which resources, as both women and men often enjoy the use of specific plants and animals within public spaces or on the private property of others. Women's rights generally depend on a relationship to the individual or group exercising "ownership" rights of disposal and exclusion as well as practical control. There are nevertheless strong social pressures to adhere to norms of behavior which support women's access. Where customary law is still widely respected, women can often call on male leaders to enforce their access rights to trees, forests, bush lands and their products when they are challenged by their husbands or other male relatives (Talle, 1988; Rocheleau, 1991; Asamba and Thomas-Slayter, 1995; McLain, 1992; Edmunds, 1997).

These rights may be most easily understood in reference to the "bush" or commons. Talle, for example, has described Maasai women's rights to graze goats and sheep in the bush surrounding their homesteads, even though the fodder trees and grasses are found in common property managed and controlled by men (1988). Others have discussed women's rights to gather nontimber forest products in community forests (Hoskins, 1982; Rocheleau, 1991; Fortmann and Bruce, 1988). Yet women exercise such rights in what is more clearly private, cultivated land as well (Bruce *et al.*, 1993; Chavangi, 1984; Pala-Okeyo, 1980). Certainly women often lay claim to the right to gather a variety of medicinal plants, wild foods and other products on land controlled by their husbands (Rocheleau, 1991; Leach, 1992).

Women's gathering rights may also be recognized outside the family, based on local standards of "neighborliness" and reciprocity, joint membership in formal and informal associations, or a host of other locally defined relationships (Edmunds, 1997). McLain (1992) outlines a case in Mali where women, as borrowers of land, have no claim to ownership of trees, but still may negotiate substantial benefits from the trees located on their "borrowed" plots. In the Kibale forest region of Uganda, women may negotiate access to a male neighbor's swamp land based on the respect and assistance accorded elderly widows and her good standing in the community (Edmunds, 1997). In other cases women's spaces clearly contain resources available to men. In many communities men lay claim to timber tree species and commercial cash crops whether they are located in women's fields and gardens or not (Fortmann, 1985; Rocheleau, 1988a; Schroeder, 1993). This suggests that the function of the tree, tied to prevailing norms of the gender division of labor and authority, substantially influences the interpretation and enforcement of gendered property rights in trees.

Often we must disaggregate rights of access to

specific plants and animals still further to look at which products—timber, fuelwood, fruits, fodder—are controlled by women and which by men. In many parts of Africa women have well-established rights to collect both fruit and deadwood from men's trees (McLain, 1992; Bruce *et al.*, 1993; Rocheleau, 1988a). Leaves taken from men's trees are also available to women in some communities for forage, mulch, compost, or medical uses (Rocheleau, 1991). These bits and pieces of the landscape, despite being found on "men's" resources, are another point of intervention for programs designed to improve women's resource access. The choice of fruit tree species in Kabarole, Uganda, for example, may imply greater or lesser advantages for women; though men control both avocado and citrus trees, the poor market for avocados means that women enjoy freer access to the fruits for use in the family diet or in local gift exchanges. Outside development agents can support women's access to these products by helping to design interventions which focus on the products over which women have some measure of control, particularly in agricultural landscapes. In "bushier" areas, they might also employ a strategy of supporting women's gathering rights as a legitimate land use within both customary and formal tenure regimes.

Variability of access over time is also a critical factor in many resource tenure regimes. Often this is relatively predictable, as when women make use of "men's" croplands during the dry season in order to graze livestock, or use fallowed fields to harvest wild foods (Rocheleau, 1991; Leach, 1992). If we again disaggregate access rights, we see that seasonal variation may be a factor in shaping access to specific resources and products. Fodder trees and shrubs controlled by men during the dry season, for example, may be available to feed women's livestock during wetter months.

Temporal changes in access are not limited to seasonal or other relatively predictable variations; they also apply to periodic events. For example in Machakos District, Kenya, in 1985, men and women renegotiated terms of access to land, water, trees, and food during droughts and famines (Rocheleau, 1991). During this particularly severe drought, poor women in many semi-arid communities were allowed to collect fodder and fuelwood from the private plots of wealthier residents that they could use to support themselves, their remaining livestock or to sell to earn cash and buy food. Behnke and Scoones (1992) have discussed a similar flexibility among pastoral groups in Botswana with rangeland resources, while Peters has reported variability in access to water sources based on changing local drought conditions (Peters, 1986, 1994). Interventions which reduce the flexibility of these tenure regimes by, for example,

developing rigid quantitative limits on harvesting forest products or by locating decision-making authority outside the area affected by drought, may bring disaster upon the land and resource poor, and should be avoided.

Yet another important dimension to consider in assessing men's and women's access to trees and forests are the identities of the various users and their relationships to one another. Of course, gender itself is an integral part of one's identity, and we have shown how it shapes resource access in significant ways. Membership in a particular kin group or family may also be an important and immediately evident criterion in gaining access to resources on land controlled by that group (Bruce *et al.*, 1993; Croll and Parkin, 1992). Yet other aspects of a user's identity may not be so immediately obvious. Membership in an informally organized labor exchange network has been shown to affect women's access to resources in many locations across Africa (Rocheleau, 1991; Asamba and Thomas-Slayter, 1995; Zwart, 1990; Thomas-Slayter and Rocheleau, 1995b). Gift-giving and other customary means of strengthening personal relationships are still in evidence in many areas as well (Leach, 1992). The Akamba have revived (and transformed) *mwethya* groups, a traditional form of labor exchange, in Machakos District, Kenya as a way of improving women's access to resources (Rocheleau, 1991; Asamba and Thomas-Slayter, 1995). The development of patron-client relations among women from resource rich and poor families has also been reported for *mwethya* groups in some communities where social differentiation is sharpening under land use intensification (Rocheleau *et al.*, 1994a; Thomas-Slayter and Rocheleau, 1995b). In other situations, women seem to be working through more "modern" associations, such as tree planting clubs or churches, to try to strengthen their claims (Rocheleau *et al.*, 1994b).

With the increasing intrusion of state legislation into customary law and practice, we may find women spending more and more of their time trying to shape that relationship more effectively as well (Rocheleau *et al.*, 1994a). Women's groups in Mbiuni location in Machakos District have already attempted to reshape labor obligations with respect to community resource management. In particular, they have refused to work alone on infrastructural development, forestry, water and soil conservation projects organized by local chiefs to benefit the entire community. They have instead demanded that men and youth contribute their labor as well, thus freeing up more of the women's time for their own individual and group activities (Rocheleau *et al.*, 1994a), including continuing efforts to establish timber and fruit trees in gardens, fencerows and woodlots.

While this is not an exhaustive list of the dimensions through which we can understand how access to trees and forests is gendered, it should be sufficient to point out the necessity of looking beyond women's lack of formal land tenure and a strict analysis of gendered space. A complex network of access rights exists in most rural African communities which calls for carefully crafted project and policy interventions. Currently, interventions in community forest management, farm forestry and agroforestry frequently invest all access rights in a single "owner," partly for the sake of bureaucratic simplicity and efficiency, partly on the assumption that such "owners" need exclusive rights in order to manage their land effectively. Unfortunately, because women's rights to resources do not generally include the primary rights of disposal and control, interventions which invest exclusive ownership rights in a single individual undermine women's customary rights of access to trees, tree products and other vegetation. Forestry projects and programs can better protect women's access rights by allowing for multiple uses of specific spaces and resources by multiple users, and by prioritizing nonconsumptive uses, such as the gathering of fruits or harvesting of fallen wood, prunings, coppiced wood or leaf fodder which do not preclude most other uses.

Another lesson which emerges from this sort of analysis is the role of negotiation and bargaining in most customary resource tenure regimes. With the pattern of access so complex, so dependent on users identities and so sensitive to changing ecological, economic and social conditions, hard and fast rules are difficult to apply in everyday practice. Even the most established and clearly codified rules are constantly being reinterpreted, renegotiated, reconstituted or rejected. This is particularly true where livelihoods are undergoing rapid change, as in areas of high male emigration (Palmer, 1985), large environment and development projects (Barrow, 1992; Edmunds, 1997), state resettlement schemes (Talle, 1988; Rocheleau *et al.*, 1994b; Chimedza, 1988), or significant and recent market integration (Jackson, 1985; Carney, 1988; Thomas-Slayter, 1992). The dynamic nature of their political, economic and ecological contexts cause shifting alliances among affinity groups, as in the case of women in western Uganda who supported the planting of men's timber trees on their fuelwood gathering lands, to protect the entire community from eviction by outsiders (Edmunds, 1997). They subordinated their interests as women to the maintenance of larger group rights to land against other communities or outside interests. This choice represented a conditional and contingent, rather than categorical, shift in the women's priorities for group solidarity.

In spite of the value of codified customary law

that recognizes women's nested rights to trees, forests and their products, some caution is in order. The danger of too literal an application of gendered tenure over forests, trees and their products is that codification of these customary systems of resource tenure may not have distinguished between the place and the function and value of the resource in question. For example, ethnographic accounts might note a gender division of plants and products such that the plants along the fence are women's business, gardens are women's domains, or distant common gathering areas are under the management of women. In some cases researchers report that men manage animals and women cultivate while in other cases the opposite is true.

These divisions may express complementarity of resource control and management in parallel, equally valued domains. But, such arrangements may also simply reflect the fact that these women's places, plants, animals and products were residuals and leftovers, either background or abandoned parts of the landscape, attributed to women because of their irrelevance or secondary importance to men's activities at that time. In the latter case, as the status of these resources and places changes and they become commercialized and more valuable they may be redefined as men's places, plants and products. Such a change would not imply an erosion of gendered domains but rather a reassertion of the gender ideology of flexible complementarity under uneven relations of power. In such a situation men would not be erasing the imprint of gender on the landscape; they would simply be remapping the boundaries between gendered terrains to maintain their continuing privilege, reflecting the changing distribution of power and wealth in the landscape. This has been widely reported in the case of the commercialization of fuelwood, which has occasioned a shift in gendered control over the trees, the products and the enterprise (Fortmann and Rocheleau, 1985; Hoskins, 1982).

The power to draw the boundaries between gendered domains resides in varying degrees, though not entirely, with men. In such cases technology, land use and tenure changes introduced from outside may precipitate a radical redefinition and valuation of "resources" and a subsequent reconfiguration of gendered spaces, species and products by men. Likewise women may seize the opportunity of change to seek greater advantage in the gender division of resources. The long term effect of these changes on land and labor efficiency of tree crop production or forest conservation may or may not be positive. Women may be displaced or lose access to vital resources or they may gain increased flexibility to independently access resources through the market, depending on the context, as well as class, ethnicity, age or other differences between women.⁵

Flexible guidelines or norms of access and careful attention to women's groups as property holders therefore seem much better suited than rigid regulations to people's everyday practice in most areas of Africa. Flexible guidelines are open to negotiation, based largely on the social and political relations among users. As feminist poststructuralist scholars have suggested, ignoring the role of negotiation in social processes allows more powerful groups to naturalize those relations that benefit them. An explicit recognition of the importance of negotiation may provide women better opportunities to defend existing rights to resources, and to expand those rights as social and ecological conditions change. Rural women recognize the importance of social relations in these negotiations and often spend considerable time and energy nurturing and maintaining relationships with each other, with male neighbors, and even with more distant authorities as a means of securing access to resources (Rocheleau, 1991; Edmunds, 1997). There is a growing concern for improving women's influence over decisionmaking, for strengthening their voice in the process which creates (and recreates) the rules which govern resource access and control (Chimedza, 1988; Rocheleau, 1988a, 1991). This would seem to imply involvement of both men's and women's organizations in each new project contract and in the ongoing development of land use codes (Hoskins, 1982; Fortmann and Rocheleau, 1985). It will also mean assuring that women have equal access to technical and administrative information which will affect tree and forest management. Only then will women be able to protect their rights in conditions of unpredictable social and ecological change.

(g) *Typology of resource access possibilities in several dimensions*

To illustrate some of our points in another way, we have created a typology of resource access possibilities that highlight how access is gendered along different dimensions. We match each "type" with examples taken from case studies and field experience.⁶ Each example has access dimensions other than those we have chosen to discuss. The typology is an illustrative device to clarify the complex realities of tree and forest access, not to represent those realities completely or perfectly.

3. TYPES OF GENDERED SPACE

In many places men and women have separate spaces in the form of separate farm plots, with one or both or neither having legal rights of ownership. In some cases women gain access to land independently

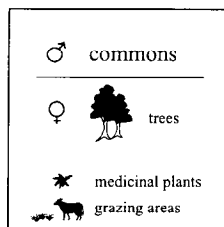
of their husbands, enjoy substantial management rights and responsibilities on that land, and control the products of their land and labor. Women may have their "own account" gardens or croplands, as documented in The Gambia (Carney, 1988), the Mende in Sierra Leone or in areas where Islamic law allows women to inherit property (Jackson, 1985; Lastarria-Cornhiel, 1995). Land title may be an enabling but not sufficient condition for women to exercise control over the use, management and products of trees on their plots.

Regardless of women's landholding status, their forests and trees are often in spaces controlled by men, whether under customary or statutory law. There is a real need in many places for women to gain title to forested property to preempt clearing, whether it is currently under common or private property regimes. The option of formal title deeds to land or trees held by women's groups is one possible solution, although unequal relations of power within women's groups may still limit the access of some women to tree and forest products. Overall, there is real scope, but not much precedent for inclusion of complexity within new laws or procedural rules governing access to and use of trees, regardless of the property regime for land.

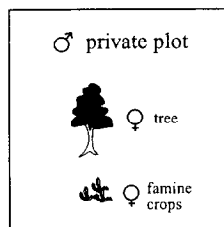
4. GENDERED ACCESS TO RESOURCES WITHIN A GIVEN SPACE

The gendered separation and nesting of land and tree rights takes many forms. Figure 1(a) outlines a situation in which women have rights to specific trees within what is generally understood to be a men's commons. Talle has described how women have had unrestricted access to the wells, fodder and fuelwood trees which Maasai men maintain in their common pasture grounds, on the presumption that take little and use the resources for domestic needs (1988). In more heavily-wooded areas, women residents may enjoy relatively free access to all but a few commercially valuable plant species in bush held by a men's clan or other corporate group (Hoskins, 1982). Women's rights to trees, shrubs and grasses found in common lands are based almost entirely on customary law and the political processes which sustain it. They therefore must engage from time to time in activities which reinforce their rights to common areas, such as resistance to the privatization of bush and forest (Edmunds, 1997), or joining women's groups performing work in common lands. But with the commons rapidly disappearing as a legal category on two-dimensional maps, women in many areas are investing more of their time in developing new ways of obtaining access to trees and other forest and bushland resources on what is formally private land. In

a Women's access to specific resources on commons controlled by men



b Women's access to specific resources on men's individual plots



c Men's access to specific resources on women's individual plots

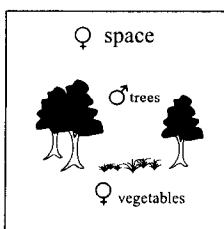


Figure 1. Gendered and shared access to resources on individual, public, and common lands.

Machakos District, Kenya women have largely reasserted the commons through labor exchange groups which negotiate the exchange of group labor for grazing and gathering rights (including fuelwood and tree fodder) on the holdings of wealthier members (Rocheleau, 1991).

Figure 1(b) illustrates a case where individual men have significant rights of management and disposal over a plot of land (from formal ownership to *de facto* control), but where women retain the rights to gather wild foods and medicinal plants from trees, shrubs and annual plants. Women may even enjoy the right to manage some of these resources, as when they plant, protect and prune "scrubby" *Sesbania sesban* trees on men's plots (Bradley, 1991), or sow cotton or other "small things" in the midst of men's upland rice fields (Leach, 1992). To

our knowledge, such rights have yet to be officially recognized by statutory law in the region but continue to be protected under the customary law of a wide variety of ethnic groups. As we have already mentioned, however, women's rights of access to these resources are under threat as the commercialization of agriculture shifts cropping systems to strictly controlled monocultures, with fewer "small things" and "wild trees" left in the field. Technological interventions which cannot tolerate "weeds," bushy areas, polycultures and other "spaces" where women find a variety of resources should therefore be discouraged in most circumstances, or allowances need to be made for alternative spaces for women's trees and "minor" crops, or for separate women's plots (held by individuals or groups).

Men's rights to trees on land held by women are illustrated in Figure 1(c). McLain has described this case for women in Mali who have borrowed land to cultivate (1992). Even where women have a longer-term interest in the land, however, men may exercise rights of disposal to the trees found there. This is especially true of timber species which help men meet their responsibilities for house building, or their interests in earning cash. Schroeder has described how men landowners used environmental rehabilitation projects to plant trees in the midst of women's gardens, taking advantage of women's labor to maintain fences and to water trees, as well as capturing the wells previously installed for women's projects (1993). He also points out how this right jeopardizes women's management of their gardens, as the trees eventually shade out the vegetables below. Under these conditions, project planners could best help women by promoting resources which still fall under the control of women, such as nontimber, noncommercial fruit tree species. Alternatively, women's commercial trees may be linked to vertically integrated processing and marketing operations under the control of women, assuming that local social and political institutions would support or at least tolerate such an initiative.

5. GENDERED PRODUCTS OF A GIVEN RESOURCE

As we telescope further into the features of the landscape, we find examples of specific products over which women may have control, despite their association with both resources and land under men's control. Figure 2(a) is an example where a woman has access to fruits found on a tree which she has cared for, even though it is "owned" by her husband and the tree is found on her husband's private land. Researchers have described such a case from Siaya District, Kenya, based on gendered tree

use described by participants in a CARE KENYA Agroforestry Project (Feldstein *et al.*, 1989). Again, it is not a matter of a husband simply giving the fruit to his wife; she has rights of collection and use recognized by other users, including her husband. In another case from Siaya, women said that they would refuse to cook for a man who refused to allow them to collect fuelwood from compound and woodlot trees, and were supported by the male village elders in their assertion (Feldstein *et al.*, 1989). Yet, in many parts of Siaya women are restricted from harvesting fuelwood from *Albizia* and *Markhamia* trees. These trees are used for building, considered a "higher use" and necessary for men's responsibilities. Women do have ready access to many other less valuable species. In nearby Kakamega District, women's fuelwood harvest may be limited to purchase of whole trees from men in other households or to periodic harvest of fuelwood as a by-product from their husbands' harvest of *Eucalyptus* trees for timber.

Figure 2(b) illustrates a case where resources controlled by men on common land provide women with specific products. Women often hold recognized rights to the branches which are left after men cut trees for poles or timber in community forests (Hoskins, 1982). Recognizing and reinforcing these nonconsumptive gathering rights, both in the evaluation of the costs and benefits of any proposed change in land use and in the formation of public policy, would lend significant support to women's efforts to maintain and expand their access to vital tree, forest and bushland resources.

6. GENDERED ACCESS BY TIME

Women's access to and control over spaces, resources and products can vary significantly over time depending on changes in a host of ecological and social factors, and the manner in which these changes are negotiated among men and women. In Sierra Leone the management of a single space is the responsibility of men during periods of groundnut cultivation and of women during "fallow" periods, as described by Leach (1992). A more strictly seasonal shift occurs among the Turkana, where *ekwars* (riparian forest patches) that are managed more closely by men for cattle fodder during the dry season are more readily given over to women's control during the wet season for sorghum cultivation, goat fodder, and fuelwood sales (Barrow, 1992).

Customary resource tenure is often sensitive to less predictable periodic changes in ecological conditions. In some parts of Machakos District, Kenya, access to fodder resources on private land is tightly controlled in years when other fodder sources

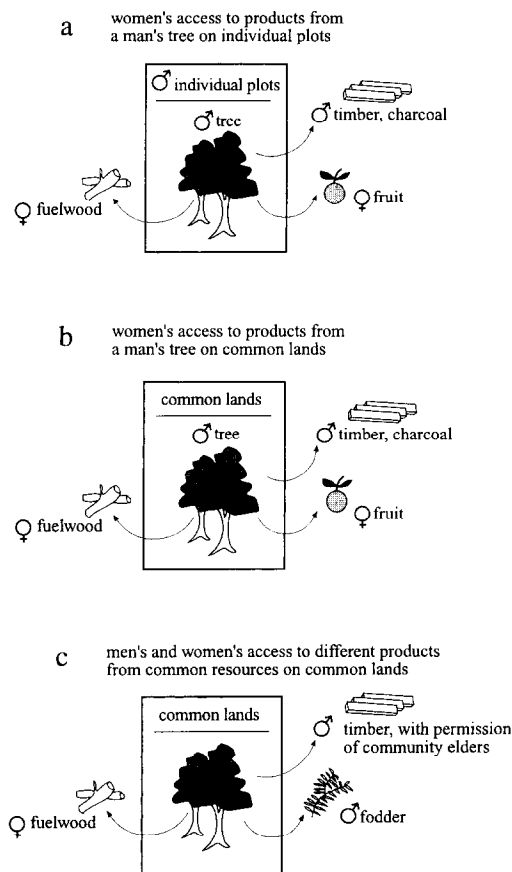


Figure 2. Gendered and shared access to particular products from specific resources.

are abundant, but may be opened up to neighbors, friends and extended family when famine has struck the area, as in 1985 (Rocheleau, 1991). Women's *de facto* access to resources may also improve during periods of high male outmigration, as has occurred in areas where seasonal work on plantations is available. Perhaps the best way to protect women's rights in fluid ecological and social conditions is to assure that they have a voice in a decision-making process which responds to such changing circumstances. This means involving women's organizations, church groups and other associations in which a diversity of women have a significant and influential presence in an ongoing process of developing, evaluating, restructuring and enforcing codes of conduct and, where appropriate, resource management contracts. If women's participation is limited to the initial phases of a particular intervention, men may respond to changing circumstances and the restructuring of activities without adequate negotiation with women (as a group) over resource rights. Resource management personnel can facilitate full

participation by women throughout the life of a forestry project or program, through a rigorous locally based review of the sharing and division of resources, addressing the separate and shared concerns of both men and women, and of class, ethnic, and age groups.

7. CASE STUDIES OF NESTED TENURE

The gendered tree tenure typology is an abstraction designed to illustrate some of the ways in which resource access can be gendered. Several types of gendered access however, can be at work at one time in any particular community. These different tenures are "nested" one within another. This should not be understood as an assumption of stability or complementarity; relationships among tenures depend on shifting ecological and social conditions which repeatedly force women and men to renegotiate their terms of access to specific resources. Nevertheless, some patterns may be discerned, and can

help us better understand the changing tenure regimes in these and other places.

Two case studies from Kenya illustrate the complexity of nested tenure. The first draws on field work in Siaya District in a relatively well-watered agricultural community with moderate population densities and significant woodland and aquatic resources. A second case in Machakos District represents an agricultural community in a drier region where woodlands vary from large expanses of degraded forest to small patches and linear remnants of diverse dry forest species in agrarian landscapes. While such a sample cannot represent the diverse tenure regimes in Kenya, let alone all of Africa, they are indicative of that diversity, and they alert us to the profusion of nested and overlapping tenure configurations in any given community.

(a) *Luo farming community in Siaya District, Kenya*

Pala-Okeyo (1980) documented women's loss of customary rights of land use and access in this region during the land tenure reforms (privatization) which took place from the 1950s to the 1970s. She described a system of resource allocation and management with women's resource use and access rights nested within common property controlled by the men's lineage. Women's rights were allocated to women as a group for use of the commons, and to individual women through their husbands. Their individual resources included some shared resources on the extended family homestead and their own individual cropland plots, suballocated by husbands to individual wives and subsequently to their sons and the wives of their sons.

During the 1980s the CARE Kenya Agroforestry Project explicitly aimed to address deforestation and fuelwood shortage issues in Siaya, as well as to contribute to crop and livestock production through tree products and tree services. The project sought not only to involve but to serve women farmers as constituents and as part of that effort the field staff collected information on the prevailing norms of land and tree tenure,⁷ long after the land tenure reform. The women and men who answered their questions noted that Luo custom did not allow women to plant trees, and that all trees would need to be planted by men and would subsequently belong to them. This rule was related to the recognition of tree planting as a mark of ownership. Moreover, they expected that men would make the species choices and determine the placement of the trees. The participants noted that shrubs (specifically *Sesbania sesban*) were women's property—to plant in cropland, manage, use and dispose of as they pleased—both among the neighboring Luhya people (Bradley, 1991) as well as among the Luo. Men and women

also expressed interest in different products from the tree project: men generally wanted poles, timber and fodder, while women more often wanted fuelwood and fodder. Both showed some interest in soil fertility improvement, a service already provided by the *Sesbania* planted by women in their croplands.

The prevailing gender division of land, trees, shrubs, crops, and their products at the start of the project in 1985 is illustrated in Figure 3. The gender division of rights, responsibilities and labor investment in land, plants and products is pictured for part of the holdings of a man who is head of a polygamous family unit, showing the main home compound, the head man's field and the first wife's field. The junior wife's field is not pictured. The insets of the first wife's field, trees, and products show not only a nested gender division of tenure but also substantial differences in tenure between species. The senior man owns the land as well as the trees and some would say, even the crops in the fields. Once the grain crops are harvested and stored they belong to women. Likewise, the citrus tree belongs to the senior man, but the fruits of the citrus tree belong to the first wife, who tends it, regardless of who planted it. The *Sesbania* shrubs belong to women.

The project team initially developed two strategies to address both the gendered livelihood interests and the gendered tenure situation. First, they defined tree nurseries as women's workplaces (an increasingly common practice in community tree projects in Kenya in 1985) and also selected tree species according to women's group preferences for products and species (almost without precedent nationally). Once women had chosen the species and raised the seedlings many of them went on to plant the trees themselves, breaking with longstanding local custom, and strengthening their investment in their farms. Of those who did not plant their own trees, most chose the placement and spacing (usually fencerows or hedgerows in croplands) and their husbands or sons planted the trees. In a few cases men chose the place and the planting arrangement of the seedlings from the women's nurseries. Second, the choice and representation of species also influenced the gender division of tree planting labor and subsequent tree rights. Project staff introduced the *Leucaena leucocephala* as a shrub in order to identify this fuelwood and fodder tree as a woman's plant, and they pruned seedlings of some other species to encourage branching and a bushy form, rather than straight tall growth form. The project also initially discouraged Eucalyptus in the nurseries and did not allow sale of seedlings, both of which curbed men's interest in the seedlings from the project nurseries. But after filling the demand on their own farms (50–200 trees each, adding up to millions of trees planted on the farms of the District) many women did wish to convert their

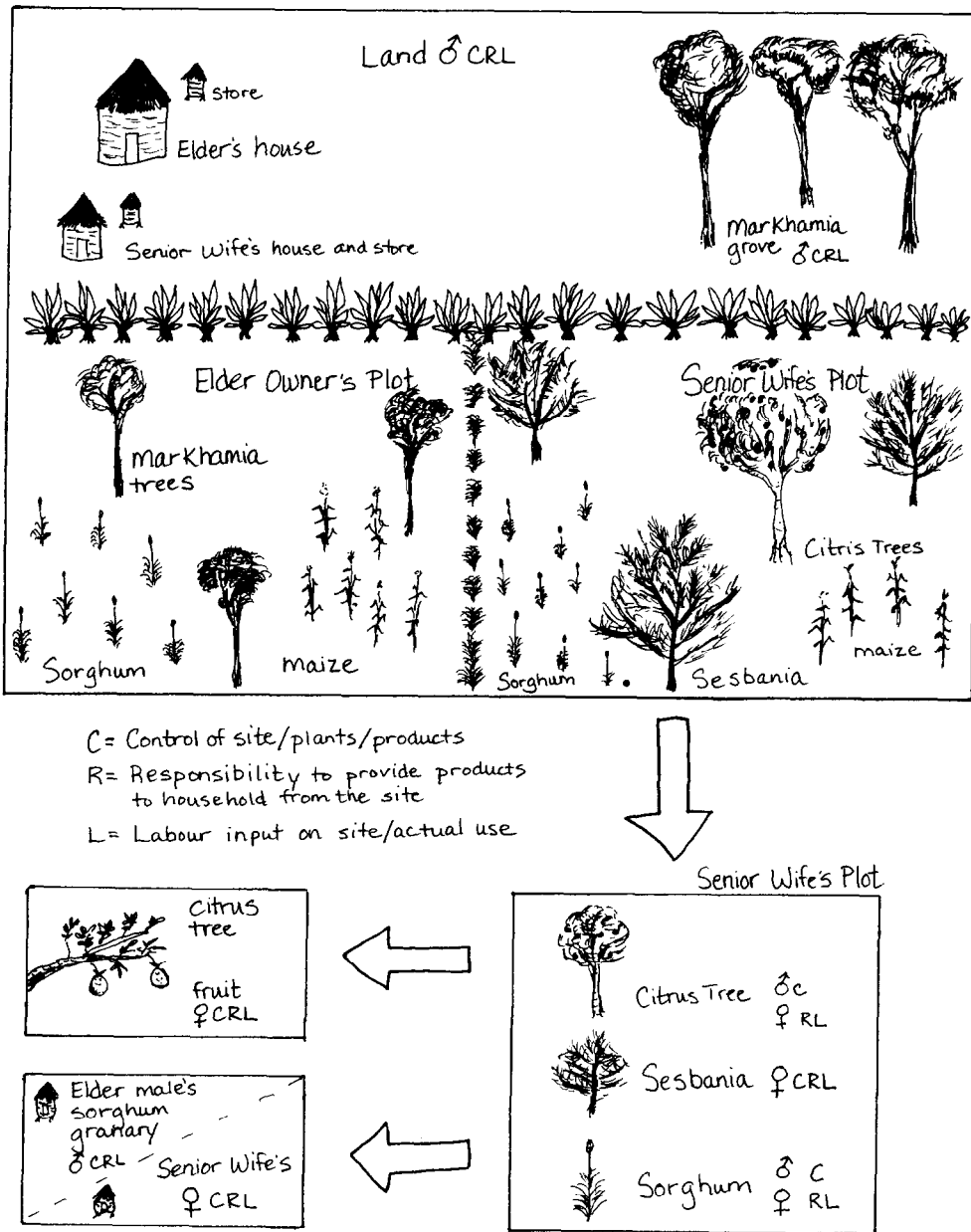


Figure 3. Farm household in Siaya District, Kenya.

nurseries to commercial production of timber tree seedlings for sale to men.

In this case tenure concerns rapidly shifted from control of trees on their own household lands to control of the women's group nurseries and the disposition of their seedlings as products. The project rules initially instituted to guarantee planting of

"women's trees" later obstructed their development of commercial nurseries. The experience in Siaya suggests that forestry and agroforestry projects may need to reevaluate even the most successful of tenure related practices and policies to adjust to changing conditions and different stages of project development (Scherr, 1988, 1990, 1994).

(b) *Akamba farming community in Muchakos District*

According to some accounts the Akamba were originally hunters who came to what is now Muchakos District, Kenya from south of Mt. Kilimanjaro (now Tanzania) in the 1500s (Lambert, 1947a, 1947b). The matrilineal society reorganized itself as a patrilineage with the establishment of the clans that persist to the present, and they began to keep large herds of cattle and to cultivate small intensive garden plots near their home corrals. Over the course of the last 100 years, under the impetus of European colonization, and later "national development" the Akamba people have been displaced from large tracts of their best farming and grazing land, then resettled and sedentarized as "producers" and "residents" and mobilized as paid labor. Throughout the region they have occupied since the 1500s (now compromised of Muchakos, Makuwani, Kitui and Mwingi Districts) they have shifted (to varying degrees) away from seasonal and periodic migration and agropastoralism to sedentary mixed farming. They have also switched from patrilineal extended family settlements with both village and regional scale commons, to nuclear family compounds on private property. While the initial Colonial Government promotion of enclosure and privatization met with widespread resistance (beginning in the 1930s and 1940s), the lines of the surveyor's map have since traced the lines of a massive spatial and ecological re-structuring across the face of Ukambani (Bernard *et al.*, 1989).

The current gender division of land, trees and their products in Kathama, pictured below, reflects the reconciliation and continual negotiation between the ethos of customary practice at household and community level and the legal survey of private property completed (in this case) in 1972. While the more densely populated areas of the region have been surveyed as long ago as 1955, most of the semi-arid lands of Ukambani have yet to be formally surveyed. In anticipation of the arrival of the ongoing survey in their community, however, most Akamba farmers and local officials now operate within a framework of smallholder plots within a private property regime. The loss of the local commons, of multiple complementary plots and far-flung common grazing lands has substantially altered women's and men's practical access to food, fuel, fodder, fiber, and water resources.

Figures 4 and 5 "map" current gender divisions of labor investment and use, responsibility to manage, and control (legal or practical) over resources on household lands and nearby "bush." The latter are legally privately owned but conditionally treated as a commons at the discretion of the owner. Oral histories from this community suggest that an ethic

of flexible complementarity under uneven relations of power has prevailed for some time. The actual distribution of gendered labor, control and responsibility for specific resources, activities and products has changed constantly throughout the last century. The situation in the sketch (as of 1986) was one in which most adult men had migrated as wage laborers, leaving women as producers and managers in smallholdings owned and controlled by men.

Tree planting and tree felling have been primarily a men's domain, while women have enjoyed use and access rights to fodder (leaves and pods), fuelwood, fiber, fruits and mulch (leaves). The difference is one of consumptive versus renewable uses, and of rights to create, to place and to dispose of tree resources on farm, versus rights of use to an existing resource. At the level of landscape features, the gender division of rights to trees is (informally, practically) regulated by place (note shared rights in cropland, fencerows, and to some extent grazing land, and women's gardens and compound spaces versus men's woodlots). Gendered access is also determined by species (e.g., *Lantana Camara*, *Acacia Brevispica*, versus *Acacia tortilis* and *Commiphora* spp.), by exotic, planted trees such as *Eucalyptus*, *Neem*, *Cassia* and *Jacaranda* versus indigenous species such as *Combretum*, *Commiphora* and *Acacia* spp.), and by growth form (shrubs versus trees overall and shrubby regrowth of Acacias, versus large standing trees of the same species).

Product type also divides men's and women's domains: men's live versus women's dead wood, for example, or women's fruits, nuts, small wood, versus men's charcoal, logs, timber, large branches, poles. Gendered commodities and markets also influence control over different species and products: men's charcoal versus women's fuelwood; "mixed" control of citrus, papaya, mango, and commercial vegetables versus "traditional" women's crops such as cowpea leaves; men's wood carvings versus women's baskets and rope; men's livestock versus women's crops; men's goats versus women's chickens and eggs. In many cases women's products are gathered from men's trees, or women's plants are nested within men's landscape features, such as a fencerow. Women's products are often "by-products" or their plants occupy secondary spaces within places or landscape features with low opportunity cost for men's enterprises and plants.

As part of the Kathama Agroforestry Project during the 1980s the men of the community participated in a series of on-farm experiments with "alley cropping" (hedgerow intercropping of *Leucaena leucocephala* with maize). After an initial round of alley cropping trials to improve soil fertility and produce fuelwood (both women's concerns) women noted their disappointment with the mulch and fuelwood production compared to their former

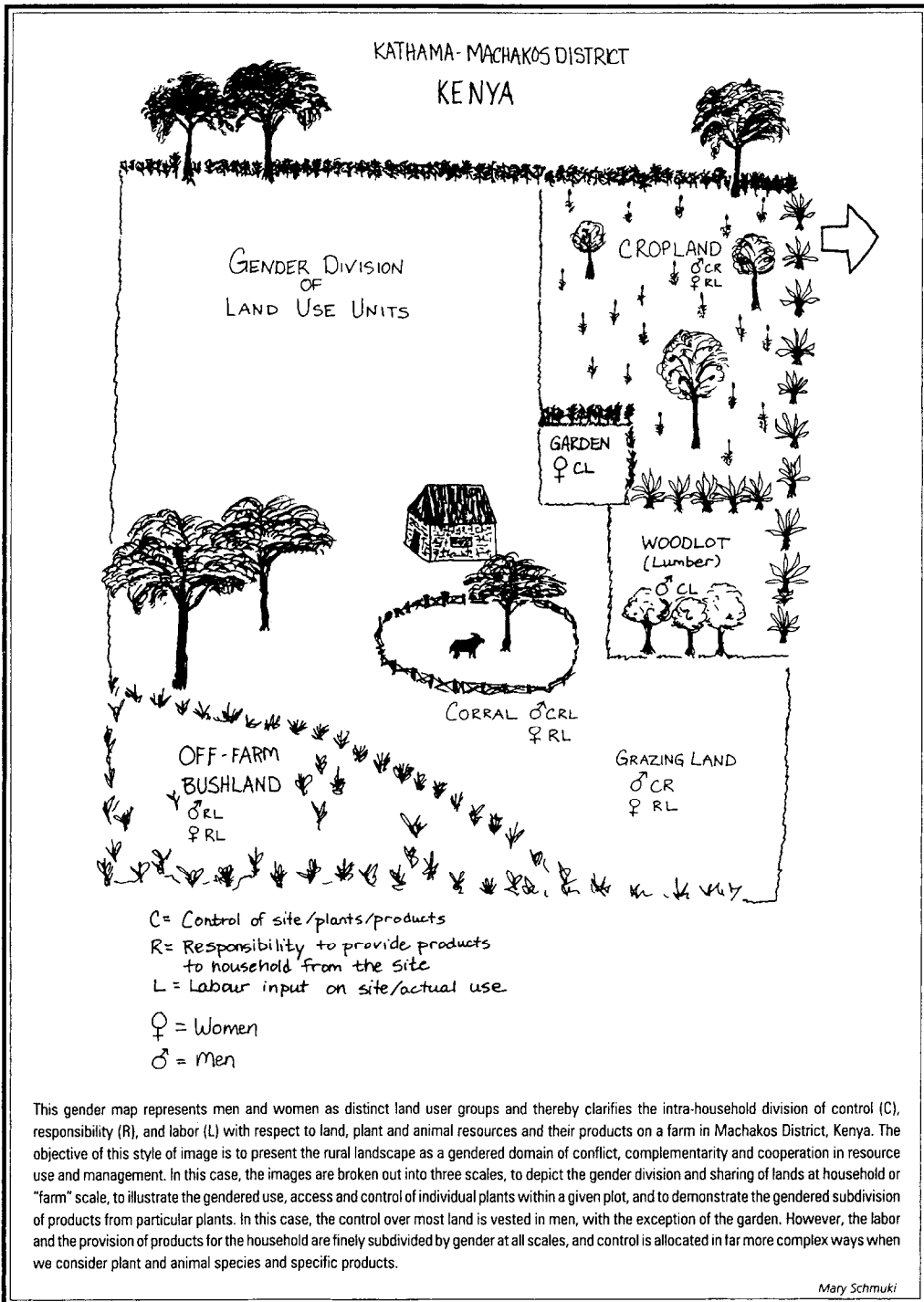


Figure 4. Kathama-Machakos District, Kenya. Reprinted with permission from Cultural Survival Quarterly.

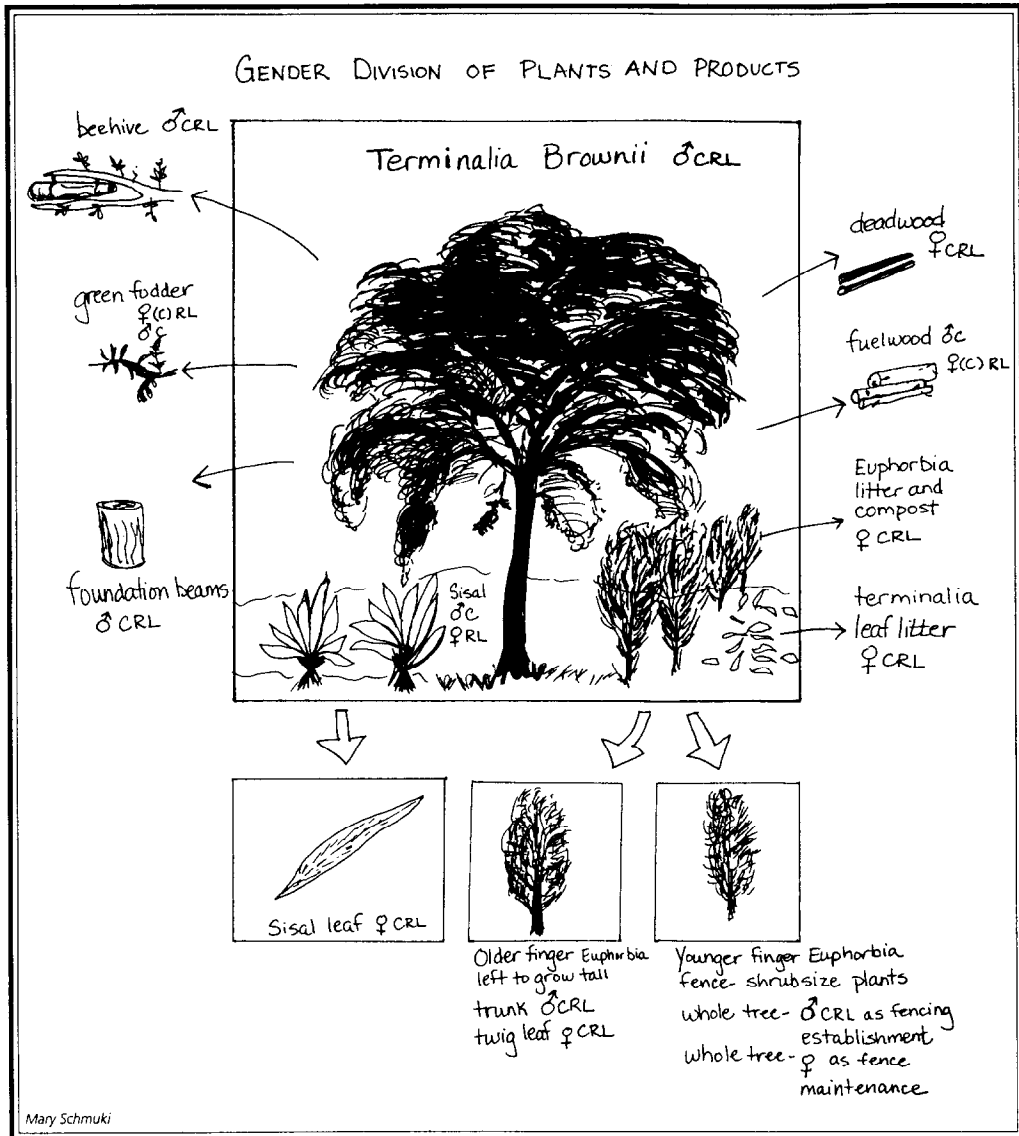


Figure 5. Gender division of plants and products. Reprinted with permission from Cultural Survival Quarterly.

sources of these products. Men noted a distinct interest in poles and fodder and often began to manage the hedgerows as rows of poles or as browse for their goats. Neither men nor women got what they wanted from the new technology, since the design had failed to incorporate gendered tenure relations and product streams on smallholder farms.

As part of a community-focused expansion of the project with women's groups, women in Kathama raised seedlings, primarily in women's group

nurseries, and they planted experimental, "emergent" gardens in spaces within the home compound or along the fence line or internal boundaries. Woodlots (for timber, fuel and fodder) were limited primarily to men or to women heads of household, or in some cases women farm managers with permission from absentee husbands. While many women have raised large numbers of papaya and other fruit seedlings in their group nurseries as well as trees for fuel, fodder and poles, the papaya has become a major cash crop

in the area and may soon fall under the control of men or of household heads and farm managers. As in the case of Siaya, noted by Scherr (1988, 1990) gender alone does not account for the division of control over trees and their products. However, we can safely say that gendered tenure relations and flexible complementarity under uneven relations of power are central to the distribution of power over plants and their products in this landscape. The choice of species, spacing and products and their marketing strategy under new agroforestry technologies will affect both the landscape and gender relations in this and similar communities. The challenge is to make that process conscious, fair and effective in social and ecological as well as economic terms.

8. CONCLUSION

Recent work on tenure has called our attention to the difference between legal and defacto rights and legal rights versus actual control of forest and tree resources, with lines of conflict, coexistence or cooperation drawn by class, gender, caste or other poles of identity and difference. Throughout the world women have been excluded from access to and control over a wide range of land, forest and tree resources and their products by interventions ranging from agrarian land tenure reform and contract farming to forest protection. We have reviewed several instances of gendered tenure changes related to trees, forests and land in Africa, with an emphasis on specific examples from Kenya. The tenure disadvantages for women however, may not be inherent in the interventions *per se*, but rather may reside in the intersection of local and outsider gender ideologies with each other and with a specific technology or land use change. The local gender ideology may be one of flexible complementarity under uneven relations of power, while outsider gender ideologies may project shared interests and fixed hierarchies of gender power under patriarchal structures (e.g., the globalized "Western" view), or, alternatively may be based in the liberal feminist corollary of gender equality without difference. The outcome of land use and technology changes may also be quite different under conditions of deforestation in forest land versus reforestation or afforestation of agrarian or pastoral landscapes. Likewise, legal changes in ownership may have very different effects on gender relations than a major change in land use and cover within a given place, whether it be a commons within an ancestral homeland or a household plot in a resettlement project.

In response to the complexity and diversity of existing land use systems, property regimes and gender division of labor and authority we suggest

that policy and technology design in forestry and agroforestry begin in each case with a set of questions about gender, trees and tenure. Rather than prescribe a fixed response to what is complex, variable and dynamic, we argue for careful attention to gender and class equity in process and procedures, in the definition of stakeholder groups and in the choice of institutions to represent various constituencies. This may mean working with several groups that represent people in nested and overlapping constituencies that reflect the multiple roles, identities and interests of men and women across class, location, occupation and other points of difference and affinity. We also strongly suggest "mapping" gendered resources as well as gender relations of power (Slocum *et al.*, 1995; Rocheleau *et al.*, 1995). The gendered power to plan, to design, to reconfigure, or to resist reconfiguration of the landscape and reassembly of plant communities is a major issue for the future.

Perhaps the most important challenge is to create the mechanisms for discussion, negotiation, and arbitration of gendered tenure regimes under a variety of circumstances. International and national agencies can help to define robust procedural rules for processes ranging from land adjudication to tree product sales. Agencies promoting forest technology and land use changes may also need to develop flexible legal instruments to formalize (or create) complex codes of multiple use which recognize, reconcile and perhaps reform gendered rights to use forests, trees, and their products. As in the case of land rights in South Asia described by Agarwal (1994), women's tree rights in many households within diverse communities may be best guaranteed (either maintained or expanded) through women's group ownership on behalf of individuals, whether as members of a collective or shareholders in a corporate enterprise with well-defined rules of membership, participation and distribution of resources and benefits. In other households and communities women's trees and forests may flourish under common, public or private property regimes, with or without separate places, plants and products allocated to women by customary or statutory law. Project contracts for production and sale of particular tree products can also serve as instruments to expand and/or maintain women's access to forests, trees and their products. In the last analysis, greater gender equality in tree tenure (including forests, trees, and their products) will depend on close attention to internal structures within planning and technical support agencies. It will also hinge on the innovative application of participatory methods for thorough discussion of the gender relations of power, their intersection with property regimes and the possible futures of both.

NOTES

1. Traditional is placed in quotes to connote the problematic nature of this word applied to practices which are not static, but rather evolving and subject to modification by negotiation between various land user groups and state institutions. The property regimes usually labeled "traditional," as opposed to modern, European statutory law, actually constitute complex outcomes of cultural and environmental change, and often incorporate elements of modern statutory law on private and public property regimes. This often occurs as an adaptation to land markets developed at national level or in anticipation of formal surveys and land adjudication. Many of the land use and tenure systems in place in Africa in the 1980s also reflected adaptation or transformation of pastoral and agropastoral practices to sedentary settlements and a shift toward agricultural production and wage labor.
2. These rules are sometimes interpreted with reference to officially recognized elders in court cases.
3. While this represents real progress for many young women and their children, it does not yet deal with divorced, abandoned or abused married women, who are deemed to have a place (albeit a troubled one) in the compound of their husband's family.
4. Such measures would not suffice, however, to secure full control over the land or other resources conferred by any given project, as ownership may not be sufficient for women to exercise control (See Agarwal, 1994; Wangari, 1991; Antwi-Nsiah, 1991), particularly for young single women still dependent in other ways on their fathers.
5. See Jackson's (1985) case study of the Kano Irrigation Scheme and the divergent fates of women from two ethnic groups under the same land use and tenure interventions.
6. "Field experience" refers to our limited, privileged, personal and professional sharing of someone else's home, habitat, community, workplace and marketplace.
7. Dianne Rocheleau worked with members of the CARE Kenya staff to develop field research and extension methods and participated in the initial round of group interviews and key informant interviews, including discussion of gendered tenure of land, trees and tree products.

REFERENCES

- Agarwal, B. (1994) Gender and command over property: A critical gap in economic analysis and policy in South Asia. *World Development* **22**, 1455–1478.
- Agarwal, B. (1995) *A Field of One's Own: Gender and Property in South Asia*. Cambridge University Press, Cambridge.
- Antwi-Nsiah, C. (1991) Analysis of the problem of gender, class and regional inequalities in peripheral states: A case study of Ghana. Ph.D. Dissertation. University of Illinois, Champaign-Urbana.
- Arizpe, L., Paz, F. and Velasquez, M. (1993) *Cultura y Cambio Global: Percepciones Sociales Sobre la Deforestación en La Selva Lacandona*. Miguel Angel Porrua, Mexico, D.F.
- Asamba, I. and Thomas-Slayter, B. (1995) From cattle to coffee: Transformation in Mbusyani and Kyavaluki. In *Gender, Environment and Development: A Grassroots Perspective*, eds. B. Thomas-Slayter and D. Rocheleau. Lynne Rienner, Boulder.
- Barrow, E. (1992) *Pastoralist Resource Management Systems in Kenya*. African Center for Technology Studies, Nairobi.
- Behnke, R. and Scoones, H. (1992) Rethinking range ecology: Implications for rangeland management in Africa. Drylands Network Programme, Issues Paper No. 33. IIED/ODI, London.
- Bernard, F., Campbell, D. and Thom, D. (1989) Carrying capacity of the eastern ecological gradient of Kenya. *National Geographic Research* **5**, 381–406.
- Berry, S. (1993) *No Condition is Permanent*. University of Wisconsin Press, Madison.
- Berry, S. (1989) Social institutions and access to resources. *Africa* **59**, 41–55.
- Bradley, P. (1991) *Woodfuel, Women and Woodlots*. Vol. 1. Macmillan, London.
- Bruce, J. (1989) *Rapid Appraisal for Resource Tenure Issues*. Food and Agriculture Organization, Rome.
- Bruce, J., Fortmann, L. and Nhira, C. (1993) Tenures in transition, tenures in conflict: Examples from the Zimbabwe social forest. *Rural Sociology* **58**, 26–642.
- Campbell, C. (1996) Out on the front lines but still struggling for voice: Women in the rubber tappers' defense of the forest in Xapuri, Acre, Brazil. In *Feminist Political Ecology: Global Perspectives and Local Experiences*, eds. D. Rocheleau, B. Thomas-Slayter and E. Wangari. Routledge, London.
- Carney, J. (1988) Struggles over land and crops in an irrigated rice scheme: The Gambia. In *Agriculture, Women and Land*, ed. J. Davison. Westview Press, Boulder.
- Carney, J. (1992) Peasant women and economic transformation in the Gambia. *Development and Change* **23**, 67–90.
- Carney, J. and Watts, M. (1990) Manufacturing dissent: Work, gender and the politics of meaning in a peasant society. *Africa* **60**, 207–241.
- Chavangi, N. (1984) Cultural aspects of fuelwood procurement in Kakamega District. Kenya Woodfuel Development Project (KWDP) Working Paper No. 4, KWDP, Nairobi.
- Chimedza, R. (1988) Women's access to and control over land: The case of Zimbabwe. Working Paper AEE, 10/88. University of Zimbabwe, Harare.
- Croll, E. and Parkin, D. eds. (1992) *Bush Base: Forest Farm: Culture, Environment, and Development*. Routledge, New York.

- Davison, J. ed. (1988) *Agriculture, Women and Land*. Westview Press, Boulder.
- Edmunds, D. (1991) Forestry in Zaire. Report on the WWF/US mission to Zaire, October–December, 1990. WWF/US, Washington, DC.
- Edmunds, D. (1997) Continuity and change in the resource management institutions of communities bordering the Kibali Forest Park, Uganda. Clark University, Worcester, MA.
- Feldstein, H., Rocheleau, D. and Buck, L. (1989) Kenya: Agroforestry extension and research: A case study from Siaya district. In *Working Together: Gender Analysis in Agriculture*, eds. H. Feldstein and S. Poats, Vol. 1. Kumerian Press, West Hartford.
- Fortmann, L. (1985) The tree tenure factor in agroforestry with particular reference to Africa. *Agroforestry Systems* 2, 229–251.
- Fortmann, L. (1995) Talking claims: Discursive strategies in contesting property. *World Development* 23, 1053–1064.
- Fortmann, L. and Bruce, J. (1988) *Whose Trees? Proprietary Dimensions of Forestry*. Westview Press, Boulder.
- Fortmann, L. and Nabane, N. (1992) Fruits of their labors: Gender, property, and trees in Mhondoro district. Natural Resource Management Occasional Paper 7, Centre for Applied Social Sciences, University of Zimbabwe, Harare.
- Fortmann, L. and Rocheleau, D. (1985) Women and agroforestry: Four myths and three case studies. *Agroforestry Systems* 2, 253–272.
- Haraway, D. (1991) *Simians, Cyborgs and Women: The Reinvention of Nature*. Routledge, New York.
- Harding, S. (1991) *Whose Science? Whose Knowledge? Thinking from Women's Lives*. Cornell University Press, Ithaca.
- Hoskins, M. (1982) Social forestry in West Africa: Myths and realities. Paper presented at the annual meeting of the American Association for the Advancement of Science, Washington, DC.
- Jackson, C. (1985) *Kano River Project*. Kumarian Press, West Hartford.
- Jackson, C. (1993) Doing what comes naturally? Women and environment in development. *World Development* 21, 1947–1963.
- Jiggins, J. (1988) Problems of understanding and communications at the interface of knowledge systems. In *Gender Issues in Farming Systems Research and Extension*, eds. S. Poats, M. Schmink and A. Spring. Westview Press, Boulder.
- Lambert, H. E. (1947) Land tenure among the Akamba: Part I. *African Studies* 6, 131–147.
- Lambert, H. E. (1947) Land tenure among the Akamba: Part II. *African Studies* 6, 157–175.
- Lastarria-Cornhiel, S. (1995) Impact of privatization on gender and property rights in Africa. Paper prepared for the Gender and Property Rights International E-mail Conference, International Food Policy Research Institute, Washington DC, May–December.
- Leach, M. (1992) Women's crops in women's spaces: Gender relations in Mende rice farming. In *Bush Base Forest Farm: Culture, Environment, and Development*, eds. E. Croll and D. Parkin. Routledge, New York.
- Leach, M. (1994) *Rainforest Relations: Gender and Resource Use Among the Mende of Gola, Sierra Leone*. Smithsonian Institution Press, Washington, DC.
- McLain, R. (1992) *Recommendation for a New Malian Forest Code: Observations from the Land Tenure Center's Study of Land and Tree Tenure in Mali's Fifth Region*. Land Tenure Center, University of Wisconsin, University of Wisconsin Press, Madison.
- Mohanty, C. (1991) Under western eyes: Feminist scholarship and colonial discourses. In *Third World Women and the Politics of Feminism*, eds. C. Mohanty, A. Russo and L. Torres. Indiana University Press, Bloomington.
- Moore, D. (1993) Contesting terrain in Zimbabwe's eastern highlands: Political ecology, ethnography, and peasant resource struggles. *Economic Geography* 69, 380–401.
- Moore, H. (1988) *Feminism and Anthropology*. Polity Press, Cambridge.
- Okoth-Ogendo, H.W.O. (1991) *Tenants of the Crown: Evolution of Agrarian Law and Institutions in Kenya*. ACTS Press, Nairobi.
- Pala-Okeyo, A. (1980) Daughters of the lakes and rivers: Colonization and the land rights of Luo women. In *Women and Colonization: Anthropological Perspectives*, eds. M. Etienne and E. Leacock. Westview Press, Boulder.
- Palmer, I. (1985) *The Impact of Male Out-Migration on Women in Farming*. Kumarian Press, West Hartford.
- Peters, P. (1986) Inter- and intra-household dimensions of community livestock and water management in Botswana. In *Understanding Africa's Rural Households*, ed. J. L. Moock. Westview Press, Boulder.
- Peters, P. (1994) *Dividing the Commons: Politics, Policy, and Culture in Botswana*. University of Virginia Press, Charlottesville.
- Posey, D. (1985) Indigenous management of tropical forest ecosystems: The case of the Kayapo Indians of the Brazilian Amazon. *Agroforestry Systems* 3, 139–158.
- Riddell, J. (1987) Land tenure and agroforestry: A regional overview. In *Land, Trees, and Tenure: Proceedings of an International Workshop on Tenure Issues in Agroforestry, May 1985*, ed. J. B. Raintree. International Council for Research in Agroforestry, Nairobi and Land Tenure Center, University of Wisconsin, Madison.
- Rocheleau, D. (1988a) Women, trees and tenure: Implications for agroforestry. In *Whose Trees? Proprietary Dimensions of Forestry*, eds. L. Fortmann and J. Bruce. Westview Press, Boulder.
- Rocheleau, D. (1988b) Gender, resource management and the rural landscape: Implications for agroforestry and farming systems research. In *Gender Issues in Farming Systems Research and Extension*, eds. S. Poats, M. Schmink and A. Spring. Westview Press, Boulder.
- Rocheleau, D. (1991) Gender, ecology and the science of survival: Stories and lessons from Kenya. *Agriculture and Human Values* 8, 156–165.
- Rocheleau, D. (1995) Gender and biodiversity: A feminist political ecology perspective. *IDS Bulletin* 26, 9–16.
- Rocheleau, D. and Ross, L. (1995) Trees as tools, trees as text: Struggles over resources in Zambrana-Chacuey, Dominican Republic. *Antipode* 27, 407–428.
- Rocheleau, D., Schofield, K., Mbuthi, N. J. (1994b) People, property, poverty and parks: A story of men, women, water and trees at Pwani. In *Gender, Environment and Development in Kenya: A Grassroots Perspective*, eds.

- B. Thomas-Slayter and D. Rocheleau. Lynne Reiner, Boulder.
- Rocheleau, D., Steinberg, P. and Benjamin, P. (1994a) A hundred years of crisis? Environment and development narratives in Ukambani, Kenya. Working Papers in African Studies, No. 189. African Studies Center, Boston University, Boston.
- Rocheleau, D., Thomas-Slayter, B. and Wangari, F. eds. (1996) *Feminist Political Ecology: Global Perspectives and Local Experiences*. Routledge, London.
- Rocheleau, D., Thomas-Slayter, B. and Edmunds, D. (1995) Gendered resource mapping. *Cultural Survival Quarterly* **18**, 62–68.
- Sarin, M. (1996) Case studies of gender, class and ethnic conflicts in joint forest management. Paper presented to the electronic conference on Conflict Resolution and Community Forestry, FAO Community Forestry Program, Rome.
- Sherr, C. (1988) Pilot survey of adopted agroforestry practices in the CARE Agroforestry Extension Project. ICRAF-CARE Project Report No. 6, ICRAF, Nairobi.
- Sherr, C. (1990) The diagnosis and design approach to agroforestry project planning and implementation: Examples from Western Kenya. Planning for Agroforestry, ed. William Budd, pp. 132–160. Elsevier, Amsterdam.
- Scherr, S. (1994) Agroforestry. *National Geographic Research and Exploration* **10**, 144–157.
- Schroeder, R. (1993) Shady practices: Gender and the political ecology of resource stabilization in Gambian garden/orchards. *Economic Geography* **69**(4), 349–365.
- Scott, J. (1976) *The Moral Economy of the Peasant*. Yale University Press, New Haven.
- Slocum, R., Wichart, L., Rocheleau, D. and Thomas-Slayter, B., eds. (1995) *Power, Process and Participation: Tools for Change*. Intermediate Technology Press, London.
- Talle, A. (1988) *Women at a Loss: Changes in Maasai Pastoralism and Their Effects on Gender Relations*. University of Stockholm Press, Stockholm.
- Thomas-Slayter, B. (1992) Implementing effective local management of natural resources: New roles for NGO's in Africa. *Human Organization* **61**, 136–143.
- Thomas-Slayter, B. and Rocheleau, D. (1995a) *Gender, Environment and Development in Kenya: A Grassroots Perspective*. Lynne Reiner, Boulder.
- Thomas-Slayter, B. and Rocheleau, D. (1995b) Research frontiers at the nexus of gender, environment, and development: Linking household, community, and ecosystem. In *The Women and Development Annual*, eds R.S. Gallin, A. Ferguson and J. Harper, **4**, pp. 79–118.
- Tibaijuka, A. K. (1984) An economic analysis of smallholder banana-coffee farms in the Kagera region, Tanzania: Causes of decline in productivity and strategies for revitalization. PhD Dissertation, Swedish University of Agricultural Sciences.
- Wangari, E. (1991) Effects of land registration on small-scale farming in Kenya: The case of Mbeere in Embu district. PhD Dissertation, Department of Economics, The New School for Social Research.
- Watts, M. (1993) Development I: Power, knowledge, discursive practices. *Progress in Human Geography* **17**(2), 252–272.
- Zwart, G. (1990) Women's issues in agriculture. Background paper for the World Bank and the Zimbabwe Agricultural Sector Mission. World Bank, Washington, DC.