

## NOTES

1. I would like to thank the UN Gender and Habitat Programme and Mazingira Institute, in specific Annika Turkevis, Catalina Hincey Trujillo, and Diana Lee-Smith, for inviting me to join the 1995 UN meeting on gender and urbanization which became the basis of my involvement with this project. My most sincere thanks to Catalina Hincey Trujillo whose insights have been influential in more ways than she knows.
2. This includes Mazingira Institute and the UN Gender and Habitat Programme — for details of the process see MirafTAB 1996.

## In Theory and in Practice: Women Creating Better Accounts of the World

Louise Fortmann

### MAKING WOMEN VISIBLE

Throughout the nineteenth and much of the twentieth century, ideas of what was worthy of scholarship were highly gendered. Most social science research focused on men (usually white men) or male-dominated institutions. Finding "women" in an index or mentioned in the text was a considerable surprise, even an occasion for rejoicing. Then with Esther Boserup's 1970 book, *Woman's Role in Economic Development*, came a steady stream of scholarly works on women and rural development by such pioneers as Meena Acharya and Lynn Bennett (1981), Bina Agarwal (1986), Edna Bay (1982), Noel Chavangi (1984), Carol Colfer (1981), Elizabeth Croll (1985), Carmen Diana Deere (1982), Ruth Dixon (1978), Ann Fleuret (1977), Marilyn Hoskins (1980), Shimwayi Muntamba (1982), Dianne Rocheleau (1988), Gita Sen and Caren Grown (1987), Kathleen Staudt and Jane Jaquette (1982), and, of course, Irene Tinker (1976a, 1980b).<sup>1</sup>

Their work focused on invisible women — the invisible woman farmer, the invisible woman agroforester or forester, the invisible woman fisher — and made them visible to state agencies and donors as well as to other scholars. Much of the work focused on individual women or pried apart the notion of unitary households to identify women's roles, asking: What work do women do? What resources, in what quantities, do they have to work with? What are they responsible for? What costs do they bear? What benefits do they achieve? The picture that

emerged was one of women whose work and knowledge were essential parts of rural livelihood systems and who were, in general, disadvantaged vis-à-vis men in most spheres of access to resources and power.

One could quite correctly conclude that this body of scholarship grew out of the women's movement. Under the banner of "the personal is political," analysis and critique were making gender discrimination visible in structures and processes ranging from the workplace, to the provision of health care, to access to education and credit, to prevailing discourses about intelligence and sexuality. However, this chapter looks at the body of scholarship in a different way, exploring the production of knowledge by and about women and rural development.<sup>2</sup> It takes as the starting point Donna Haraway's (1999, 75) assertion: "Feminists have to insist on a better account of the world." For her this is the goal of science (182), which I take to include the social sciences. How, this chapter asks, have and should we use women's theory and practice to develop better accounts of the world? It further assumes with Haraway (1999) that objectivity is not the "god-trick of seeing everything from nowhere" (176) but rather that objectivity is necessarily embodied and, therefore, all knowledges are situated and partial. Thus, the male scholars before Boserup were not able to pull off the "god-trick." Rather, their knowledge, situated in the partiality of the male gaze, led them to an account of the world that consisted of and privileged male agency, knowledge, and efficacy. Women's scholarship produced knowledge situated in the female gaze that gave a better account of the world by repicturing that world through women's agency, knowledge, and efficacy.

The chapter proceeds in three parts, each exploring how theory and practice rooted in situated knowledges can be used to develop better accounts of the world. Together they focus on what questions are asked, whose knowledge counts, and whose voices are permitted to be heard. Throughout, it is taken as given that women create knowledge through their practices including not only scholarly research and theory but also the everyday practices of producing livelihoods and raising families. The first section turns the idea of women as societal victims and perpetrators of environmental degradation inside out by asking about the adverse effects of discrimination against women on the environment. The second section explores the possibilities of analysis that combines the partial gazes of the global North and South. The third section argues for the practice of an interdependent science that eschews hierarchical notions of whose knowledge counts and what kinds of voices are permitted.

#### MAKING MULTI-SCALE EFFECTS OF GENDER DISCRIMINATION VISIBLE: AN ENVIRONMENTAL EXAMPLE

Making multi-scale environmental effects of gender discrimination visible requires us to consider two literatures, one at the intersection of women and the environment and the other on gendered property rights. Rural women in the global South often appear in the literature on the environment in one of three roles: victims, perpetrators, or manager/stewards. The literature, often written by women, on women as environmental victims has documented the adverse effects on women of environmental degradation and environmental projects that do not take them into account. Often women must walk farther for fuelwood (Karan and Iijima 1975) and water (UNEP 2004) as a result of environmental degradation. And some environmental projects have forced women to walk farther for fuelwood (the original Campfire program in Masoka, Zimbabwe, is a case in point) or destroyed their livelihood strategies (Schroeder 1997). The perpetrator literature portrays women's practices such as fuelwood collection as a cause (sometimes major) of environmental degradation (Van Horen and Eberhard 1995). Finally, the literature (also often written by women) documenting the knowledge and practices that enable women to be competent manager/stewards of natural resources on which they depend is extensive (Colfer 1981; M. Leach 1994; Rocheleau and Edmunds 1997).

Much of the literature on property and environment has focused on the debate about environmental outcomes of different property regimes: common, public, and private property (Ostrom 1991; McCay and Acheson 1987). Attention to gender in this literature is rare (Meinzen-Dick and Zwartveen 2001). The literature on gendered property regimes demonstrates that generally women are less likely than men to have access to land in their own right or to own or control land or the crops they produce and are more likely than men to be landless or to lose access to land with a change in their marital status; when they are landowners, women have less land than men on average (Bruce 1990; Maboreke 1990; Ngqaleni and Makhura 1996; Verdery 1996; Agarwal 1994; Simbolon 1998; Dore 2000; Deere and Leon 2001; Whitehead and Tsikata 2003; Casolo 2004).<sup>3</sup>

These literatures pose situated knowledge at different scales. The literature on women as manager/stewards takes a micro-level view, focusing on the knowledge, practices, and livelihood strategies of individual women and their households.<sup>4</sup> The macro level appears in this literature in the form of institutions and

structures that have adverse micro-level effects on women. The property regimes literature generally proceeds as if macro-level property institutions were gender neutral and focuses on their environmental effects. When the environmental degradation literature takes a gendered view, it focuses on macro-level environmental effects and looks to women's micro-level practices (real or imaginary) as a cause of environmental degradation. The following case study connects these partial and situated knowledges in asking the question: Do the adverse micro-level effects of macro-level institutions also have adverse effects at the macro level? Do the focus on and implicit willingness to accept gendered adverse outcomes at the micro level mask adverse societal level effects?

*An Example of Adverse Environmental Effects of a Gendered Property Regime*

In a 1991-92 study of 27 percent of the households in two villages<sup>6</sup> in central Zimbabwe, 56 percent of the respondents had planted at least one tree in the homestead. But only 44 percent of the women planted trees in their homestead, in contrast to 83 percent of the men. To analyze homestead tree planting, logit models were used.<sup>7</sup>

The analysis showed that women, regardless of class, were significantly less likely to plant trees in the homestead than men. Taking the average value of each variable over the entire sample, the predicted probability of planting a tree is 58 percent. With all other variables held at their mean (average), men had an 83 percent probability of planting a tree in the homestead while the probability for women was only 43 percent. Wealth was not statistically significant at the .05 level. Poor and mid-level farmers were as likely as the wealthy to have planted at least one tree, although they were not necessarily planting for the same reasons. Poor men have a positive (and highly significant) probability of planting a tree. This analysis suggests that gender plays a more important role than wealth in the decision to plant trees on homestead property.

Why might gender adversely affect tree planting? It is not physical strength, as anyone knows who has done women's work: planting groundnuts, hauling water, collecting firewood, making groundnut butter (smooth, not chunky!) with a grinding stone. It is not women's lack of knowledge about or need for trees and tree products: in the study area for all but two categories of use, women knew far more tree species than men did. Neither age nor education had any statistical significance. Tree planting is neither culturally proscribed for women nor

prescribed for men in the study area. Insecurity of land and tree tenure resulting from a gendered land tenure system is by far the most persuasive explanation.

This interpretation is strengthened by two additional pieces of data. First, women who are divorced in the village (all of whom who had lost all rights to the trees they had planted and tended during their marriage even when they stayed in the village) were emphatic that they would not plant trees in a new marital compound lest they once again be discarded and once again lose everything. Second, gender did not affect tree planting in the community woodland where women retained their rights after a divorce as long as they continued to reside in the village. The latter finding must be approached with caution since women's tree planting in community woodlots may be done not on their own behalf but as an emissary of the household. Nonetheless, it is instructive that gender has adverse effects on tree planting when women's tenure is insecure and apparently has no such effects where their tenure is secure.

Although we must be cautious in drawing conclusions from a single study, these data are certainly suggestive. To the extent that the ecological stability and health of a society and its production systems depends on women's willingness to invest their labor in long-term investments (what Blaikie and Brookfield [1987] call *landesque capital*) such as tree planting, terracing, irrigation infrastructure, and fences, property and tenure systems that discriminate against women will have negative societal consequences. Since in many parts of Africa the productive rural population is still disproportionately made up of women, this finding should give pause to those concerned with maintaining or improving ecological conditions that can continue to sustain agricultural livelihoods. Clearly, property rights must enable and encourage women to be ecological stewards.<sup>8</sup>

The study also shows the importance of recognizing the partiality of one's knowledge. Better accounts of the world require not only making women visible but also making visible the multi-scale adverse effects that result from micro-scale adverse effects on women.

**MAKING VISIBLE THE COMMONALITIES OF WOMEN IN THE GLOBAL NORTH AND GLOBAL SOUTH**

This section focuses on the need for and the possibilities of combining the partial knowledges of both theory and practice in the global North and global South. The following vignette exemplifies the problem at hand.

At a 2002 international meeting on community forestry networks,<sup>9</sup> the sug-

gestion that participants break out by regional groups was met with a pained query from a prominent scholar and practitioner of development: "But what would the people from the North talk about?" The reply, "We would talk about community forestry networks in the North," left many dumbstruck. Practitioners and development scholars from the South as well as those from the North whose scholarship and practice were limited to the South could not imagine that rural people in the South had anything in common with rural people in the North.<sup>10</sup> The mirror image is the common belief of those in the North that the South has no relevance to them, despite the fact that the northern community forestry movement is firmly rooted in the community forestry experience of South and Southeast Asia.

These reactions are not surprising when one acknowledges that, with some exceptions,<sup>11</sup> scholarship on women (and other issues) in the global South and in the global North have been more or less distinct. Of course, some edited volumes (Rocheleau et al. 1996; Perry and Schenck 2001) as well as conferences include both. But more often than not, discussion of women in one geographical area takes place as if the other areas do not exist in any relevant way. This may reflect the time and money required to do comparative research effectively or the narrow focus of many scholarly studies. It may well mean that the everyday lives of women in one region are not imaginable to women in another. Or it may be because the altogether appropriate insistence that we pay attention to social embeddedness has led to a failure to ask if the macro-level structures and processes within which local communities operate are similar across regions. For example, all too often the working assumption seems to be that communities in countries where the Bretton Woods institutions influence (or dictate) policy or initiate projects are qualitatively different from communities in countries where they do not. Perhaps the position of a community is conflated with the power of the country where it is located. Whatever the reason, these partial gazes result in a failure to look at the similarity of the effects of institutions such as transnational corporations and NGOs on communities in the North *and* South.

Practice may provide the most effective pathway to better accounts of the world though combining the partial gazes and situated knowledges of the North and South. There are numerous examples of bridging practice involving institutional practitioners. An Indian forester with experience with Joint Forest Management in India directs a U.S. national community forestry organization. Community forestry practitioners from the North and South met at the Johannesburg

summit and made common cause, forming the Global Caucus on Community Based Forest Management. The successful women's saving circles of the Green Bank came to the United States in the form of the ShoreBank in Chicago.

Commonalities are made visible at the personal level. When villagers from resource-dependent rural communities in the South visit rural resource-dependent communities in northern California, both groups almost inevitably make the same comment: "We never realized that they have the same problems we do. Now we know we are not alone." Thus members of the Hupa Nation in northern California and the villagers of Bawa, Mozambique, recognized that they both struggle to maintain culturally based natural resource use and management against government interference. On one occasion an African NGO staffer quipped that he never would have guessed that his country would have so much in common with a small California forest community; namely, that in both places major decisions are made in Washington, D. C., without consulting local people. The instant the words were out of his mouth, the political relationships that Cameroonians and the residents of Hayfork had in common became visible to everyone.

To return to scholarly practice, imagine what we might learn if we broke out of our geographic ghettos and did, for example, a study of the economic and social strategies of poor female household heads in the North and the South, or a study of the reasons for and effects of excluding wives from ownership of lineage land in parts of rural Africa and family farm corporation in the U.S. Midwest, or a study of the cultures and social consequences of physical and sexual abuse of women wherever they are.

Much mutual learning between North and South is clearly to be done. It is to further possibilities of mutual learning between civil and conventional scientists that the next section turns.

#### MAKING INTERDEPENDENT SCIENCE VISIBLE

The twenty-first century's most privileged form of knowledge production is conventional science. Conventional scientists are formally educated and use prescribed experimental and observational techniques. Their findings, often validated by statistical tests, networks of other scientists, and journals, are intended to be generalizable and may not translate easily into useful solutions to local problems.<sup>12</sup> Conventional science has been criticized for frequently being hostile to women and for privileging a narrow spectrum of possible ways of producing

knowledge including both the questions that may be asked and the methods that may be used (Merchant 1980; Haraway 1999; Maddox 2002; Bug 2003; Conkey 2003; Gowaty 2003).

Civil science is a different way of producing knowledge. Civil scientists by and large work informally using experimental and observational techniques they and their predecessors have developed themselves. Their science depends on their knowledge of a particular set of social-ecological relationships. Their findings, validated by utility, are well suited to providing useful solutions to local problems but may not be generalizable. Civil science encompasses indigenous knowledge, traditional knowledge, local technical knowledge, and the ethnosciences.

Given the situated and partial nature of knowledge, one way to develop better accounts of the world would be through the collaboration of civil and conventional sciences. For the most part, there is relatively little interaction between the two modes of knowledge production but there are exceptions. For example, in the field of medicine, conventional scientists have used civil science as a source of information. A familiar example is the common or Madagascar periwinkle, *Catharanthus roseus*, which was traditionally used in different parts of the world to stop bleeding, as an astringent and a diuretic, and to treat diabetes, wasp stings, coughs, lung congestion and inflammation, sore throats, and eye irritation and infections. Two alkaloids, vincristine and vinblastine, found in the Madagascar periwinkle are used in drugs made by Eli Lilly to treat leukemia and a variety of cancers. While the Madagascar periwinkle story, without question, has had good outcomes for cancer patients, civil-conventional science interactions of this unidirectional sort are likely to have undesirable features. The relationship is generally hierarchical, privileging conventional science. It may also be extractive as demonstrated all too well by the problems of bioprospecting and biopiracy (Chapela 1994; Fairhead and Leach 2003; see also note 9 below).

A different mode of interaction is possible through interdependent science, a set of knowledge-producing practices intended to provide better accounts of the world through collaboration between conventional and civil scientists. Interdependent science does not privilege conventional science. Rather, it recognizes that good science integrates and acknowledges different actors and actions, including different ways of knowing, such as civil science. It recognizes practice as a mode of knowledge production (Chaiklin and Lave 1993; Holland and Lave 2000). It recognizes, as this essay has argued from the outset, that all science is embodied and that objectivity comes not from the "god-trick" but from the

recognition of partiality. Its metric of objectivity is knowledge and explanatory power. It recognizes the multiple female and male voices in which better accounts of the world emerge, voices ranging from sparse passive-voice prose to chatty accounts and explanations, from the chants of a ritual healer to the thick description of an ethnographer and many more. Since its goal is the co-production of knowledge, it is likely to utilize participatory methods.<sup>13</sup>

Examples of interdependent science involving women and men demonstrate its potential. The combination of farmers' knowledge with the knowledge and technologies of conventional scientists in participatory plant breeding has shortened the time required to develop a new variety and increased the adoption of new varieties. For example, in Rwanda, "Farmer bush bean selections outperformed their own mixtures with average production increases of up to 38 percent; breeder selections in the same region on average showed negative or insignificant production increases" (Sperling 1996:45). Conventional scientists who have been involved in participatory plant breeding say they would never go back to doing plant breeding on their own because conventional plant breeding is more time consuming and less effective (Robin Buchara personal communication, 2000). Sally Humphries (personal communication, 2004) reports the commercial release of an improved bean variety by a research team of women and men Nicaraguan farmers working in collaboration with a conventional science agronomist. In the face of a dearth of knowledge about the ecology of commercially important floral greens, a team of women and men floral greens harvesters worked with a forest ecologist to develop experimental trials on the effects of harvesting on floral green production (Ballard et al. 2002; Ballard and Fortmann 2004). This research has provided information on which to base management policies. A team of women and men Zimbabwean villagers working with a rural sociologist and a botanist documented the use and management of 122 varieties of indigenous trees (Chidari et al. 1992). This was an important complement to the approach of the Forestry Commission, which concentrated on growing a few exotic species. In addition, the team also documented the extensive knowledge that women had of trees and their uses, knowledge that generally was greater than men's.

In addition to producing knowledge, the practice of interdependent science can empower the civil scientists including women. After the women and men of the Zimbabwe village research team presented their research findings at a well-attended village meeting, the Chairman of the Grazing Scheme (the *de facto* vil-

lage head) rose to his feet and said, "I never thought we could learn anything from a woman, but we have." While this did not overturn patriarchal social relations in the village, it was an important step, a moment that no one could take away from the women research team members whose work and knowledge had been acknowledged.

#### CONCLUSIONS

This chapter has shown that women's research and practice has led to better accounts of the world through making neglected social actors and social relations visible, by bringing actors and social relations thought to be distinct into conversation with each other, and by embracing and utilizing difference and collaboration rather than hierarchy and extraction. To be sure, this is an ongoing project requiring the iteration of making things visible in each of the ways discussed here. For example, if women are to be participants in interdependent science, their knowledge of a particular subject in a particular place may first have to be made visible, the first step discussed above. Clearly, much remains to be done. Equally clearly, much has been accomplished. In theory and in practice, in the academy and in the household, farm field and forest, women have produced knowledge that we need for the lives of our children and grandchildren. One of our jobs as scholars is to collaborate in keeping that knowledge visible and validated.

#### NOTES

I would like to acknowledge the research assistance of Katariina Tuovinen and the critical comments of Emery Roe.

1. Despite its length, this list only scratches the surface of the numbers of brave and energetic women who did research on and published about women even when it put their own careers in jeopardy.
2. The focus of this chapter is limited to rural development both for reasons of manageability and because the literature on women and rural development has often been more applied than other feminist scholarship and research in women's studies. For genealogies of scholarly work on women in development see M. Leach (1994) and Rocheleau et al. (1996).
3. Mexico provides a case to the contrary. Hamilton (2002) argues that although land titling eliminated women's inheritance rights, because of *ejidatarias'* social status as mothers deserving their children's cooperation and the respect and aid of the community following their husband's death, they have generally been well provided for.
4. Meimzen-Dick and Zwartreven (2001) note the general focus at the household or micro level and call for attention to the community or meso level. This chapter calls for further scaling up to the macro level.
5. Put in a more pithy fashion: is oppressing mother also bad for Mother Nature (and everybody else)?

6. The research project documented the management of trees and woodlands and their commercial and domestic uses as well as the factors affecting tree planting. There were 48 men and 106 women in the final sample. There are more women because men in many households worked in town most of the year and came home only occasionally.

7. Logit models are appropriate for situations in which individuals must make a choice between two options, in this case, to plant or not plant, and can be used to estimate probabilities—in this case, the probability that a person will plant a tree. This study is described in detail in Fortmann et al. 1997.

8. Although it is beyond the scope of this chapter, it is worth noting that land races developed, often by women, over a number of years using deliberate agronomic practices and seed selection are not recognized as deserving of legal protection (Kameri-Mbote and Cullet 1999). Thus, it can be argued that the right of women to intellectual products of their agricultural labor is as insecure as their rights to the physical means of production and their products. Kameri-Mbote and Cullet maintain that the current lack of protection of intellectual property rights at the level of the individual farmer "has contributed to the erosion of the genetic base necessary for the further development of agrobiodiversity" (24).

9. Community forestry is a set of institutional arrangements in which communities are involved wholly or in part in decision making about and benefits from forest management as well as contributing knowledge and labor to achieve healthy forests and social well-being (Cecilia Danks personal communication, 2003).

10. Similarly, many participants from the global South who attended a 2004 traveling workshop on community forestry in Alabama and California were quite surprised to discover that there were both forests and poor people in the United States.

11. Refugee studies are an exception in that they address questions of women from the South who find themselves in the North. These studies tend now, however, to address women from the North.

12. For an in-depth discussion of conventional, civil, and interdependent sciences see Ballard and Fortmann (2004).

13. There is informal evidence (but no systematically collected data) that suggests women are more likely to use participatory methods. Whether this is true is a question worth researching.