

11-28-2000

## Women, Environment and Development: Sub-Saharan Africa and Latin America

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**Women, Environment and Development:  
Sub-Saharan Africa and Latin America**

Evaline Tiondi

Thesis submitted to the Faculty of the  
University of South Florida  
in partial fulfillment of the requirements for the degree of  
Master of Arts  
in  
Women's Studies

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November 28, 2000  
Tampa, Florida

Keywords: Ecofeminism, Agriculture, Forestry, Water Resources

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# Women, Environment and Development: Sub-Saharan Africa and Latin America

Evaline Tiondi

(ABSTRACT)

Issues related to women, environment and development constitute a major global concern today. Women's roles as agents of change in the environment has increasingly become the focus of both research and policy concerns. Environmental resource management is directly linked to development, and this makes it crucial to examine the activities of women more closely. Women's role in the management of natural resources assumes a multidimensional nature. Unfortunately, the central and crucial role that women play is often both overlooked and unappreciated, rendering them invisible and greatly diminishing their contribution as both producers and active agents in sustainable development. One of the arguments central to this thesis is that rural women's connections to the physical world can inform feminist theory as well as broader policy frameworks. Their knowledge and experiences can and should be fundamental in devising programs for sustainable development. Case studies are central to this thesis because they provide specific situations and issues and lend a concrete material reality to the topics under discussion. They point to the multidimensional and multifunctional nature of women's roles in natural resource management in addition to highlighting the diverse constraints that women face. Case studies help identify strategies that could be applied to facilitate sustainable development efforts by presenting us with tangible situations rather than dealing with the abstract. Clearly, this thesis has not covered the entire scope of issues that need to be addressed in the women, environment and development debate. Nor are the suggested strategies for enhancing women's role as environmental resource managers exhaustive. Nonetheless, it is my hope that this thesis serves as a beginning for what constitute some of the key issues when engaging with the women, environment and development debate.

## Chapter One: Introduction

### *Women, Environment and Development: A Historical Perspective*

The women, environment and development (WED) scholarship started from within environment-related disciplines such as forestry (fuelwood and energy) and agriculture in the context of development. The oil crisis of the early 1970s as well as the widely felt effects of drought in the Sahel sharply jolted the North into a realization that natural resources were not infinitely exploitable. As a result, development planners began to give serious attention to the need for a more systematic global energy planning for the future. As users of woodfuel, women were to become the target group of a two-fold strategy to grapple with the future trends of diminishing resources of wood energy: (a) reduce woodfuel consumption by introducing wood-saving stoves; and (b) initiate large-scale afforestation to increase wood supply. With time, community forestry projects were established that involved women as the primary actors (Braidotti *et al.*, 1994).

In 1970, Ester Boserup published a book, *Woman's Role in Economic Development*, and by the mid-1970s, this book had sparked a great deal of interest and attention on women's role in agriculture as well as in rural development at large. In the face of global economic problems, increasing environmental degradation and the feminization of poverty in the South, it became a matter of priority for both development agencies and the United Nations to address environmental issues within the process of economic development (Braidotti *et al.*, 1994).

Soon after the 1972 UN Conference on the Human Environment, held in Stockholm, the United Nations Environmental Program (UNEP) was established. It acted as a catalyst and coordinator on environmental issues within the UN. In 1984, UNEP initiated a program to enhance women's participation in environmental management and subsequently the topic of women and environment entered the UN's agenda. At the same time, women's actions and special role in environmental management were being presented at major international conferences and forums via case studies. They were portrayed as environmental managers whose involvement was crucial to the achievement of sustainable development. Such studies served as tools to further the WED debate and to stimulate international recognition of women's problems in relation to natural resource management. For example, the Brundtland Report, *Our Common Future*, published in 1987, promoted long-term strategies for achieving sustainable development and highlighted the importance of environmental issues in the development process. Following its publication, the WED debate focused on the imperative for women's involvement in strategies and programs aimed at sustainable development. Gradually, WED became "women, environment and sustainable development." During the late 1980s, national and international events organized around the WED theme gained increased momentum and in the wider debate on sustainable development, women were increasingly promoted as "privileged environmental managers" and depicted as possessing specific skills and knowledge in environmental care (Braidotti *et al.*, 1994).

Vandana Shiva's (1989) work, *Staying Alive*, also made a powerful connection between the impact of development on women and the environment. Shiva argues that ecological destruction and the marginalization of Indian women have been the results of Western science and economic development paradigms. Rather than focus on women as passive victims of development, Shiva

argues that women in India have played a foremost role in struggles to preserve land, water and forests. Some have interpreted Third World women's "deeper" insights as products of their participation in cultures that value the maintenance of life. In addition, the gendered division of labor in these countries has forced women to provide subsistence for their families while men seek profit-earning strategies. Women's involvement in the environmental movement starts with the daily work and activities in their lives and the threats to the health of their families (Sachs, 1997).

Currently, issues pertaining to WED need to be given a central focus in national development policies of developing countries. Agriculture is the mainstay in the majority of these countries and women are heavily involved in all sectors of agricultural production. Women also are active in the consumption and maintenance of forest resources. Utilization of water resources is reflected both in agricultural and forestry-related activities. Unfortunately, women's tasks in these sectors continue to be characterized by traditional, time-consuming techniques. Utilization of environmental resources needs to be conducted with a concern for the rehabilitation and regeneration of the various resources. Women's activities in the environment, therefore, have the potential to impact either negatively or positively on sustainable development efforts. National development policies must critically assess women's roles in order to ensure responsible environmental resource utilization while achieving overall development.

#### *Women, Environment and Development: A Theoretical Perspective*

Questions regarding whether women's and men's relationships with nature differ have increasingly become a concern of feminist scholars. One outcome of this debate may be to question the extent to which women are more likely to be concerned about and capable than men in solving environmental problems. Three issues that lie at the heart of theoretical discussions on women and the environment are: (a) what are women's relationships with nature? (b) what are the connections between the domination of women and the domination of nature? (c) what role do women play in solving ecological problems? (Sachs, 1997).

In an effort to encourage a comprehensive framework regarding women's connections to the environment, Sachs (1997) suggests including analyses of issues such as the gendered division of labor, access to and control over resources, knowledge and strategies for survival, participation in social movements, and policy concerns. When women's relationship with the environment is examined using these five dimensions, concrete, material examples of how women work with, control, know and affect the environment and natural resources are obtained.

In this thesis, I will examine gendered division of labor, access to and control over resources, knowledge and strategies for survival, participation in environmental grassroots movements, and policy concerns. It is important to note, however, that although presented as separate issues at this point, there is a considerable amount of intersection and overlapping amongst them. Nielson (1990) argues that the gendered division of labor, which is a common occurrence in all societies, coupled with other social processes, are a significant factor in the ultimate reality that women will know the world differently from men.



The gendered division of labor forms one starting point for women, environment and development (WED). Typically, women's responsibilities make them closely dependent on, and give them distinct interests in, natural resources. Also acknowledged is the fact that women have a deep and extensive knowledge of natural resources based on their daily environmental experiences. By extension, it is argued that women's interests lie in sustainable environmental management and resource conservation (Green *et al.*, 1998).

The gendered division of labor is clearly evident in communities that are dependent on natural resources for agriculture, fishing, mining and forestry work, primarily for subsistence use. Gendered division of labor is a suitable means of defining women's lack of status and power in their communities and households. Typically, men control and dominate occupations directly involved with the use of land, plants, animals, forests and the waters. Their work often eclipses women's contributions to natural resource management and work in these communities (Sachs, 1997).

Across the world, women have traditionally been the caretakers of the community and their work has primarily met subsistence needs. We must also remember that women's responsibilities, as defined by their reproductive roles, tend to assume a multidimensional and multifunctional aspect. Thus, a typical working day for the majority of rural women may be as long as fifteen hours. Yet, this amount of time has to be distributed amongst various demanding tasks. It becomes difficult for women in these circumstances to devote sufficient time and effort in undertaking economically viable activities. Women may be able to spare some time to take surplus farm produce, fish and forestry products to local markets for sale. However, because of time constraints, they are unable to realize maximum profits from these efforts and their activities continue to be defined on a small scale. Ultimately, this has the effect of rendering varying degrees of invisibility to their contributions.

The following table shows how work is divided (Africa) between women and men.

Table 1: Percentage of Total Labor in Hours

Various chores	Women	Men
Clearing fields	5	95
Turning soil	30	70
Planting	50	50
Hoeing, weeding	70	30
Harvesting	60	40
Transporting	80	20
Storing	80	20
Processing	90	10
Marketing	60	40
Carrying water, fuel	90	10
Domestic stock	50	40
Hunting	10	90
Feeding family	95	5

Source: Adapted from Karl, M. (1995). *Women and Empowerment: Participation and Decision-Making*. London and New Jersey: ZED Books.

According to Shiva (1993), women farmers have remained invisible despite their contribution. Economists tend to discount women's work as "production", because it falls outside the so-called "production boundary." These omissions arise not because too few women work but because too many women do too much unpaid work of various kinds. That is, their work is invisible because it is concentrated outside market-related or remunerated work with multiple tasks that have little or no economic gain. The invisibility of women's work and knowledge arises from gender bias, which has a blind spot for realistic assessment of women's contributions. It is also rooted in the sectoral, fragmented and reductionist approach to development, which treats forests, livestock and crops as independent of each other.

Although gender segregation and domestic subsistence production have long characterized the lives of women in the economic sphere, these observations should not be construed as an indication of lack of importance and variety in women's roles in agriculture (Navarro and Korrol, 1999). Nonetheless, this certainly appears to be the case as it is apparent that women's contributions are still largely unacknowledged.

Women's access to and control over resources is a crucial factor in discussions on women's connections to the environment. Access to property, land and water rights, particularly in agricultural systems, critically shapes people's relations with natural resources. Both state policies and local practices define women's and men's differential access to land and water. State-sponsored irrigation schemes are notorious for overlooking women's concerns. Furthermore, they often increase women's workloads, typically redistribute resources to men, and marginalize women's involvement in agricultural decision-making (Sachs, 1997).

Although the argument that women are closer to nature tends to lean towards essentialist notions, it is also true that their first-hand practical knowledge on environmental issues and sustainability cannot be underscored enough. Too often, policies are formulated without consulting the women who continue to be an integral factor in environmental resource management despite their invisibility in public policy. Sachs (1997) argues that gender divisions in labor and access to resources results in men and women harboring distinctly different knowledge about the environment. Women's knowledge about animals, plants, land and water often goes unnoticed by agricultural development agencies and other personnel, yet, their strategies for survival may point to new directions for achieving environmentally sustainable agricultural and natural resources.

In areas such as biodiversity conservation and utilization, women's work and knowledge is central both because they work between "sectors" and because they perform multiple tasks. Women need and utilize skills and knowledge that is crucial to sustainability both in the production and preparation of plant foods as well as in forestry. Further, women's work and knowledge in agriculture is uniquely found in the spaces "in between" the interstices of "sectors", the invisible ecological flows between sectors, and it is through these linkages that ecological stability, sustainability and productivity under resource-scarce conditions are maintained (Shiva, 1993).

In many parts of the world, women are deeply involved in grassroots level environmental activism. Evidence suggests that they are more concerned about environmental problems than

men (Sachs, 1997). Women's networks constitute a natural mechanism for community-based actions and, often, it is the women's organizations, large or small, formal or informal, that are finding the new solutions we need. Women often initiate movements that have been nationally and internationally recognized. One of the most famous is the Chipko Movement in India, which has been successful in preventing the destruction of large areas of forests. In a project in the Sudan, women leaders working with local extension workers established tree nurseries within their compounds and planted trees around their homes. In Honduras, women participated in a project to replant areas of forest, which had been destroyed by a hurricane. They are involved in caring for the environment at grassroots level through activities such as tree planting, fuel-saving, water management and more efficient farming. Their increased participation in the development process has a positive link with the environment (Rodda, 1991).

Although some celebrate women's unique relationship with "nature", others such as Kirk and Okazawa-Rey (1998) do not agree that women are closer to nature or have an essentially nurturing, caring nature. They assert that women's environmental activism is an extension of their roles as daughters, wives and mothers, caring for families and communities. While I agree that women's environmental activism arises from the gendered division of labor, ultimately, their environmental activities position them in closer proximity with nature than men. Their domestic roles require them to be nurturing and caring and they inevitably apply these relations to the limited environmental resources available to them. The outcome is that both the gendered division of labor and women's nurturing, caring nature, place them closer to the environment. It becomes difficult to draw a line between the two because they essentially complement each other.

One of the more recent concerns in the WED scholarship is the extent to and manner in which environmental policies and programs have attempted to incorporate a gender aspect. These interventions have often been counterproductive, neither improving women's control over natural resources nor enhancing project effectiveness. It has now become clear that by overlooking how social relations such as gender are intertwined with environmental resource use, policies have failed to address the difficulties of involving women in projects ostensibly designed for their benefit. Thus, development projects have often fallen short in implementation and failed to benefit women as intended. Furthermore, the projects have not met their objectives of improved natural resource management (Green *et al.*, 1998).

While it is probably true that attempts to incorporate gender as an analytical tool sometimes fall short of expectations, it is crucial that gender-sensitive project formulation constitutes an ongoing priority in sustainable development initiatives. Most environmentally-based development projects are undertaken in rural areas where women are the primary community participants. One of the shortfalls of the welfare approach to women and development in the 1950s-70s was that women were viewed as passive recipients of development. Later, the efficiency approach sought to ensure development by recognizing women's productive roles. Currently, women's active participation in environmental grassroots activities constitutes a key element in community and national development. In this way, the role of the gendered social relations in the success of development initiatives cannot be discounted.

Over time, the emphases of WED discussions have shifted. In the early 1980s, women were commonly portrayed as the primary victims of environmental degradation. The degradation of natural resources was seen as an undermining factor in women's ability to perform their sustenance roles and also increased the cost of both their time and energy. In the late 1980s, women came to be seen less as victims and more as efficient environmental managers and conservers of natural resources. The evidence for this was that, worldwide, women were heavily engaged in environmental protection and rehabilitation. The guiding principles for policy, as formulated by WED, were that women should be incorporated fully into development program activities. The aims of this approach were to ensure that women became direct beneficiaries and that sustainable development projects were not undermined by the exclusion of women, the primary agents of environmental resource management. Thus, women's groups became the vehicle for community environmental action (Green *et al.*, 1998).

Women are important in environmental conservation because they make a positive contribution toward the conservation of the environment. It is important to note that it is the poor, the majority of whom are women, who are likely to feel the effects of environmental degradation most acutely. For example, with increasing soil degradation, poor rural women and their families become increasingly impoverished. The impact that women have on the environment and *vice versa* becomes very critical in looking for solutions to environmental degradation, particularly in the context of under-development. Indeed, if the quality of human resources largely determines the pace and nature of development, then women become a critical aspect both for environmental management and national development efforts. Consequently, the role of women in planning and implementing policies cannot be ignored (Nzomo, 1992).

Unfortunately, women still constitute a small minority in political and legislative structures in developing countries. At the local level, men continue to dominate in positions of authority and decision-making. Policy formulation is more an outcome of male priorities, and culture and traditions act to exclude women from active participation in decision-making. Consequently, projects are initiated where women may be the primary actors but are limited in determining the activities and course of the project. This defeats the goal of empowerment for women because their agency is severely restricted. In matters of environmental conservation, environmental degradation and national development, it then becomes crucial that deliberate and sustained efforts are made to integrate women into decision-making, policy formulation and project implementation and evaluation.

Green *et al* (1998) outline several aspects about policymaking and project design that are involved in the practical application of the WED approach. These include: the knowledge of environmentally related tasks carried out by women under the gendered division of labor; mobilizing the critical resources of women's labor, skill and knowledge; the delivery of project and program resources to the "right people" i.e. those currently engaged in a particular activity and benefiting from it, and; the inclusion of women in the implementation of environmental projects in natural resource management sectors in which women are heavily involved, commonly through women's groups.

The WED approach can be credited with initiating a model of social differentiation and with inspiring interest in the position of women and the implications of environmental policies and

projects. Where environmental policies and programs have tried to take gender issues into account, they have consistently been based on a particular vision of social life positing parallel and virtually unconnected, male and female worlds of work, economic activity and interactions with the environment. A number of elements common to these programs can help explain why many development projects have not benefited women or ensured women's participation despite efforts to include women: (a) the exclusive focus on women's current roles, mainly those associated with sustenance; (b) the focus on identification of women's roles without any consideration of the dynamic interactions among women and between women and men; (c) the view of women as efficient resource managers and as an untapped pool of labor; (d) the assumption that participation in a project will, of itself, benefit women; (e) the presentation of all women as the same, assuming a homogeneity of interest by virtue of their sex (Green *et al.*, 1998).

There are barriers to efforts to engage in relevant research on WED. First, there is still resistance to gender as integral to all research topics even though the link between gender and environment is increasingly recognized. Further, in making the link, researchers and policymakers tend to prioritize one element over the other, either considering environmental issues as more urgent than gender concerns or *vice versa*. A more integrated approach to gender and environment is needed to achieve sustainable development. Second, a gap exists between academia and social/grassroots movements in terms of priorities, methodologies and time-frames. Individual researchers who would like to bridge the gap often encounter institutional resistance to what are seen as unorthodox views and approaches. Examining the role of women in environmental grassroots activities can be viewed as an effort to appreciate their material realities. In doing so, we adopt their lenses and thus integrate a vitally practical perspective that is necessary to a more complete understanding of their situations. Third, endless specialization within disciplines makes interdisciplinary communication more difficult. This hinders effective analysis of the gendered social context of environmental issues and, therefore, of sustainable development (Douma *et al.*, 1994).

### *Women and Development: A Brief History of Different Approaches*

It is clear that since the concept "development" became popularized, it has had an ideological agenda and has been perused both from the right and left of the ideological divide. Development is commonly viewed from the economic perspective and, therefore, used as a synonym for economic development, the justification being that the level of economic growth and overall development is reflective of other social institutions and practices. However, development should not be perceived from a purely economic perspective but as an "overall" social process, which is dependent upon the outcome of man's effort to deal with his natural environment. Accordingly, development should not be evaluated from things, structures and systems, but rather from the point of view of its effects on human beings. Ultimately, development can be holistically termed as the end result of people's attempts to utilize nature for their betterment and the attendant social organization proceeding therefrom (Williams, 1999).

Mosse (1993) explains that the phrase "women in development" (WID) more or less sums up the earliest phase of thinking about women's role in development and the various approaches that have emerged since the early 1970s. Kabeer (1994) points out that one way of charting the

emergence of women as a distinctive category in development discourse is to monitor their changing significance within the policy declarations and institutional structures of the major development agencies such as the United Nations. The changing organizational structure of the United Nations has clearly illustrated this new consciousness. In its early years, women's issues were seen primarily in the context of human rights and confined to the Commission on the Status of Women and to the Third Committee of the UN General Assembly, which dealt with social and humanitarian matters. However, by the end of the 1980s, there were several organizations within the UN responsible for ensuring that women were integrated into its development efforts (Kabeer, 1994).

The two main areas where women's role in development received particular attention were food and population. Research on food and population helped to establish the conceptual link between women's issues and economic development, giving legitimacy to the idea that "women's issues have development policy implications." Thus, the stage was set for such issues to be incorporated into the development discourse and to take on an increasingly instrumental value in the achievement of a variety of development-related goals. The declaration of the International Decade for Women, with the official themes of "equality", "peace" and "development", signified the new visibility of WID in international forums. Above all, it represented an infusion of new ideas aimed at influencing prevailing development policy (Kabeer, 1994).

The distinct phases in the changing approaches to women and gender issues in development are Women in Development (WID), Women and Development (WAD), and Gender and Development (GAD). WID is associated with the modernization approach while GAD allows a more flexible appreciation of the dimensions of power between men and women in any community. The WAD perspective takes a more critical approach focusing on the relationship of women to development rather than simply devising strategies to incorporate them (Porter and Judd, 1999).

WID has been more concerned about providing women with opportunities to participate in male-defined and male-dominated social and economic structures (Rathgeber, 1995). WID initiatives were deployed to put women back into a social science and a development practice that had excluded them (Stromquist, 1998). WAD recognized women as important economic actors and offered a more critical view of women's positions than the WID approach. WAD, however, failed to undertake a full-scale analysis of the relationships between patriarchy, differing modes of production, and women's subordination and oppression (Porter and Judd, 1999).

The GAD approach challenges the institutional bases of gender inequality by emphasizing the unequal costs of economic reorganization for women and men. By so doing, the social costs of processes of privatization and global integration are re-examined (Feldman, 1998). The focus on gender looks at the roles and needs of both women and men, and at how these are interrelated, thus lessening the risk of marginalizing women. Ultimately, a GAD perspective leads to a fundamental re-examination of social structures and institutions, to a rethinking of hierarchical gender relations, and to the loss of power of entrenched elites, which will affect some women as well as men (Karl, 1995). GAD recognizes women as a diverse group, taking into consideration

issues such as race, class and age. Within GAD, there have been efforts to inscribe a more woman-centered approach on development projects (Porter and Judd, 1999).

Attempts to incorporate a number of ideas into an overall scheme can be depicted in the table that follows, which gives a description of five policy approaches and their key features as they applied to women — welfare, equity, anti-poverty, efficiency and empowerment. It should be noted that there are various intersections between them even though they are presented as separate sections here.

Table 2: Approaches to Women and Development

Approach	Period	Origins	Features	Remarks
Welfare	1950-70s	<ul style="list-style-type: none"> <li>- Residual model of social welfare under colonial administration.</li> <li>- Industrialization, modernization and urbanization triggered economic growth. World Bank's "top-down" approach to development.</li> </ul>	<ul style="list-style-type: none"> <li>- Women seen mainly in their reproductive role.</li> <li>- Provision of health, education and nutritional services, particularly for women and children.</li> </ul>	<ul style="list-style-type: none"> <li>- Failed to eliminate poverty.</li> <li>- Women far from benefiting from development programs, were actually being harmed by them.</li> <li>- Women were seen as passive beneficiaries rather than active agents.</li> </ul>
Equity	1975-1985	<ul style="list-style-type: none"> <li>- Original WID approach that emerged following failure of modernization development policy.</li> </ul>	<ul style="list-style-type: none"> <li>- Sought to gain equity for women in the development process.</li> <li>- Women seen as active participants in development.</li> </ul>	<ul style="list-style-type: none"> <li>- In identifying subordinate position of women in terms of relationship to men, was criticized as Western feminism.</li> <li>- Considered threatening and not popular with governments.</li> </ul>
Anti Poverty	1970s +	<ul style="list-style-type: none"> <li>- Sought to reduce poverty and provide basic needs to the poor. Women, classified as "poorest of the poor" became main targets.</li> </ul>	<ul style="list-style-type: none"> <li>- Focused on income generation for women through better access to productive resources such as land and credit.</li> </ul>	<ul style="list-style-type: none"> <li>- Overlooked fact that women were already overburdened with work; saving was very difficult for most women; capacity of informal sector to generate employment and growth is limited.</li> </ul>
Efficiency	Early 1980s	<ul style="list-style-type: none"> <li>- Neo-classical economics with World Bank emphasis on structural adjustment, privatization and liberalization of markets.</li> </ul>	<ul style="list-style-type: none"> <li>- Sought to integrate women in development projects so as to facilitate economic growth.</li> </ul>	<ul style="list-style-type: none"> <li>- Women were seen in terms of delivery capacity and ability to extend working day.</li> </ul>
Empowerment	Most recent	<ul style="list-style-type: none"> <li>- Third World's women's grassroots organizing and feminist scholarship.</li> </ul>	<ul style="list-style-type: none"> <li>- Empowerment of women and increase self-reliance.</li> <li>- Focuses on all aspects of women's lives and</li> </ul>	<ul style="list-style-type: none"> <li>- Viewed suspiciously by Third World governments and aid agencies.</li> </ul>

- work.
- Women viewed as agents rather than mere recipients of development assistance.
  - Grassroots organizing for effective political voice.
  - Explores connections and contradictions among gender, race, class and development.
  - Re-examines social structures, institutions, and gender relations.

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Source: Karl, M. (1995). *Women and Empowerment*. London and New Jersey: ZED Books.

### *Methodology*

Central to this thesis is feminist methodology. Reinharz (1992) outlines one of the key defining aspects of feminist methodology as a quest for a new approach that would entail capturing voices and accepting diversity. Indeed, this forms one of the concerns of postmodern scholarship. A distinguishing feature of feminist research methodology is that it makes use of multiple methods of analysis. This is in sharp contrast to other fields in the social sciences, which have a tendency to rely on a singular method. Multiple methods enable feminist research to be thorough and more inclusive (accommodating) of subjects. Ultimately, multiple methods increase the potential utility of the research to readers. In addition, multiple methods reflect the multifaceted identity of feminist researchers and express the complexities of women's lives. The multiple methods employed in this thesis are descriptive comparative analysis, narrative and ethnography. These methods are useful in depicting the multifaceted nature of women's experiences as depicted in the thesis. Multiple methods are used because of the recognition that the conditions of our lives are always simultaneously the product of personal and structural factors.

The case studies used in this thesis tell the story of women's experiences at various locations and each of the case studies is situated within a concrete social framework. Constraints that women experience in their environmental resource management activities are well illuminated by the case studies. Additionally, in identifying what is lacking or what can be corrected, we are able to engage in a process of advancing strategies that could enhance women's roles as actors in the environment. The key analytical tools used in my analysis are postmodernism, standpoint epistemology and ecofeminism. They are used because of their relevance to the women, environment and development debate.

### *Moving Towards Postmodernism, Difference and Identity Politics*

Women's relations with the environment can be analyzed through various lenses including the postmodern perspective. Buker (1999) underscores the importance of postmodernism as a theory that enables the reframing of one's understanding of social positions and political identities. It encourages an embracing of contextual understandings of identities and cultural practices as opposed to upholding an essentialist understanding of ethnicity, culture and race.



Postmodernism helps provide a focus on symbols and local narratives rather than on larger global narratives such as capitalism and Marxism, which have constructed social relationships on the basis of economics. Thus, the rejection of grand narratives and universalization become some of the key hallmarks of the postmodern school of thought.

Postmodern thought encourages telling and listening to local stories. Stories offer examples for thinking about what might emerge as good choices in particular social institutions. Stories are not didactic lessons but are instead ways of talking about ethical matters. The story encourages the listener (reader) to apply the narrative situation rather than to obey the moral of the tale. Indeed, narratives offer a moral code that gives the listener a very different sort of moral inspiration. Further, arising out of a need to explore the complexities involved in moral decisions, rather than a need to control citizens, storytelling enables citizens to share different understandings of social justice. Storytelling offers a way of discussing the ethical values in social practices and serves some important functions not accomplished by conversations that focus on laws and the formation of social regulatory policy (Baker, 1999).

The postmodern rejection of universalism and the critique of metanarratives, opens spaces for fresh understandings of human relationships with the environment. The postmodern focus on language and discourse provides tools for deconstructing processes, narratives and concepts such as “women”, “nature”, “environment” and “development.” Looking at these concepts through a lens that requires us to examine how these terms are used to enhance the power of the privileged, we are able to critically evaluate assumptions concerning the connections between women, environment and development. The concept of development, for example, simultaneously constructs “first world” countries at the height of an evolutionary scale of societies while portraying Third World countries as mired in poverty, hunger, overpopulation, environmental degradation, oppression of women and tradition. So universal is this narrative of development that alternative scenarios are difficult to envision in as far as the Third World is involved (Sachs, 1997).

The postmodern critique of modernist, universal metanarratives suggests a shift towards difference and identity politics. In understanding women’s connections with the environment, this emphasis on difference establishes a theoretical framework in which women’s relationships with the environment will differ based on such factors as class, race, ethnicity, sexuality and nationality. In this way, the focus is on concrete, material situations of women rather than on essential connections between “women” and “nature” (Sachs, 1997).

Donna Haraway (1988) expresses her conviction that “situated knowledges” should be upheld because only partial perspectives can promise objective vision. “Feminist objectivity is about limited location and ‘situated knowledge’, not about transcendence and splitting of subject and object. It allows us to become answerable for what we learn how to see” (p. 583). “Situated knowledges” are specific and concrete because they are about communities, not about isolated individuals. Thus, what are needed are politics and epistemologies of location, positioning and situating, where partiality and not universality is the condition of being heard to make rational knowledge claims.

Postmodernism, therefore, has a crucial role to play in forming a comprehensive perspective on women and environmental resource management. Indeed, the case studies in chapters 3 to 6 will illustrate the complex diversities that characterize rural women's lives and experiences in the management of natural resources. Postmodernism cautions against the tendency to generalize both the experiences and strategies that could be applied to improve women's conditions.

### *Standpoint Epistemology*

Theoretically, standpoint epistemology upholds the case for a greater appreciation and application of rural women's indigenous knowledge, skills and strategies for sustainability, in development initiatives (Sylvester, 1994). Communication and debate in contemporary feminist circles now revolves around ways of knowing and ways of acting and doing. In reality, the principles outlined by Sylvester cannot be taken and neatly applied to my case for integrating women more fully into the mainstream of development. One obvious factor that renders this impossible has to do with the various interpretations of the label "feminist" across most of the developing world. The greater proportion of women who are the focus of my thesis are those in the rural areas, whose livelihood is heavily dependent on the land, forests and water. Many of these women have received little or no education and have little if any concept of feminist political inclinations as would, for instance, the educated and more politically attuned women in the urban areas. Narayan (1997) asserts that many Third World women do not consider themselves feminists but do know and acknowledge that women face various forms of mistreatment within their social contexts and cultural institutions. Indeed, rural women may not think of themselves as feminists or be considered feminists at large. Nonetheless, by virtue of their close interaction with environmental resources, it becomes a matter of paramount concern that their practical, first-hand knowledge is sought and welcomed in matters of decision-making and policy formulation.

It is crucial that the standpoint of poor women is considered in development projects and if the benefits of development are to reach the most vulnerable members of the South, then development must start by seeing the world from their perspective (Cleves, 1993). Standpoint theories support democratic politics that thrive on pluralities and differences in addition to encouraging the involvement of a wide variety of people in public conversations (Baker, 1999). Consequently, the standpoint of rural women in the developing countries should be embraced in decision-making and planning procedures. Indeed, if development is to benefit members of a country as equitably as possible, it becomes a matter of top priority that the role of women as participants is re-evaluated and appreciated.

### *Ecofeminism*

At a very broad level, ecofeminism refers to various positions relating to the connections between the socially constructed categories of women and nature. In this thesis, there are sections that present case studies on women and environmental management, which constitutes a suitable practical component of this thesis. One of the greatest challenges involves attempting to merge "theory" with "practice." Ecofeminism is largely a theoretical position, encompassing various views, each with its own approaches and strategies. Examining the origins of

ecofeminism, Braidotti *et al.* (1995) explain that the term “ecofeminism” was introduced in the mid-1970s by the French feminist writer, Francoise d’Eaubonne. According to d’Eaubonne, the two most immediate threats to our survival, overpopulation and the destruction of our resources, were as a result of patriarchal oppression. The only way out would be women’s destruction of this male power.

In analyzing its theoretical origins, Lahar (1996) points out that ecofeminism draws concepts from ecology, particularly a principle of life’s interdependence, and from feminism, especially a social analysis of the domination of women that is also linked with racism and classism. Ecofeminism can be viewed as the convergence of ecology and feminism into a new social theory and political movement that challenges gender relations, social institutions, economic systems, sciences and views of our place as humans in the biosphere. Ecofeminist theory includes a systemic analysis of domination that specifically includes the oppression of women and environmental exploitation, and advocates a synthesis of ecological and feminist principles as guiding lights for political organizing and the creation of ecological, socially equitable life-styles. Sachs (1997) makes the point that rural women’s connections to the natural world, their knowledge and experiences, offer a materialist base for ecofeminism and suggests practical strategies for solving ecological crises.

Sachs (1997) distinguishes between liberal, cultural, social and socialist ecofeminism. Each of these versions are concerned with improving the relationship between women and nature though their approaches and strategies for change differ. Liberal ecofeminists are those who attempt to work within existing structures of government by changing laws and regulations related to women and the environment and providing equity for women in the workplace. Cultural ecofeminists critique patriarchy and emphasize the symbolic and biological connections between women and nature. From their perspective, women’s bodies are closer to nature than men’s bodies because of menstruation, childbirth and pregnancy. Cultural ecofeminists hold that these biological processes are the source of women’s power and ecological activism. Social and socialist ecofeminists analyze the ways in which both patriarchy and capitalism contribute to men’s domination of women and nature. All of these perspectives explore and analyze issues of social justice.

Central to much of the criticism that has been directed towards ecofeminism is the belief that women share an environmental “ethic of care” based on their biology, labor or social position. This fact has often made ecofeminism the subject of critique for upholding an essentialist claim that women’s nature is to nurture and they are, therefore, privileged to be caretakers of the earth (Sachs, 1997).

The eclectic nature of United States ecofeminism with its varied roots in feminist theory, feminist spirituality and social ecology is pointed out by Kirk and Okazawa-Rey (1998). They question whether the diversity in ecofeminist approaches qualifies ecofeminism to be a sufficiently consistent, intellectually coherent discipline. Many academics claim ecofeminism lacks cohesion and some women of color have argued that ecofeminism emphasizes gender over race and class while others argue that it focuses on abstract ideas about women and nature rather than on practical issues with a material base. However, an ecological feminism can and should, integrate gender, race, class and nation in its analyses, and that its powerful theoretical insights

can, and should translate into activism. Indeed, this forms one of the concerns of postmodern scholarship in feminist theory.

Lahar (1996) believes that ecofeminism can best be developed in the future by defining several parameters that would serve as references for diverse ideas and claims. Accordingly, these would lend coherence to ecofeminist analyses while helping to avoid some pitfalls of theoretical contradiction and to maintain accountability between theory and political practice. Lahar asserts that ecofeminism faces a challenge in maintaining, and to a certain degree, recovering a politically potent activist emphasis.

Ecofeminism does make big promises. Their fulfillment depends on theorists and activists who can embody the broad and integrated sensibilities of self and world that ecofeminism helps develop and advocate, and who can find the power and energy to act on these sensibilities to make real social and political change (Lahar, 1997:15-16).

Ecofeminism holds much potential both as a theoretical and political movement. Despite its relatively short history, it has displayed a remarkable productivity in terms of plurality and diversity in thought. I believe the possibilities that lie ahead for ecofeminism, in terms of merging theory and practice, are not only exciting but serve as a motivation to maintain a sustained interest in the development of this field.

#### *Breakdown of Chapters*

This thesis is organized into six sections. Chapter one forms the introduction and gives both a historical and theoretical perspective on women, environment and development. The methodology is outlined, which includes an examination of postmodernism, standpoint epistemology and ecofeminism as key analytical tools employed in the thesis. A breakdown of the subsequent chapters is also given.

A historical analysis is useful in forming some comprehensive perspective of women's current socioeconomic status in Latin America and Sub-Saharan Africa. The focus of Chapter two, therefore, shifts to colonialism and women. The colonial/postcolonial perspective is particularly illuminating in the agricultural sector. Women's current access to and rights to land, land use options, water resources, and degree of technology, are all factors that are better understood against a historical background.

The underlying theory in the case studies is that women's environmental grassroots activities are a crucial factor in enabling community development. This typifies the empowerment approach in the women and development debate. Women cease to be seen as passive beneficiaries of development and become active agents in development projects. Agriculture forms a key sector of environment and development issues. It is within the agricultural sector that the greatest percentage of rural women in Sub-Saharan Africa and Latin America are involved in as producers. Chapter three focuses on women and land (agriculture). Case studies examined are derived from Botswana (Central Africa), Western Zambia (Central-Southern Africa), Trinidad (Caribbean) and Peru (South America).

Chapter four is a study of women and forest resources. Women in developing countries have a close relationship with trees and the forest and gather food, fodder, fuelwood, nuts, fruits, cleaning and building materials, herbs, and medicinal extracts from forest resources. Additionally, women have a deeper insight into the availability, diversity and maintenance of tree species than men do. Their role in the use and management of trees and other forest products should inform research projects and policy recommendations. Case studies are taken from the Dominican Republic (Caribbean), Brazil (South America), and Kenya (East Africa).

Women and water resource use and management are explored in Chapter five. Water resources form an important aspect of women's work as environmental resource managers. As primary water carriers, managers, end-users and family health educators, women are in constant contact with water. Often, their domestic functions put them at risk of contact with polluted waters, increasing their vulnerability to water-borne diseases. It is crucial that women are involved in the planning, operation and maintenance of water supplies and sanitation services. Provision of water supply and irrigation are steps that can help alleviate the various tasks of women in subsistence farming. Case studies are taken from Peru (South America) and Kenya (East Africa).

The thesis concludes with Chapter six. The constraints on women's role as environmental resource managers and in sustainable development are highlighted. Strategies are offered, from a feminist perspective, which would increase women's productivity in natural resource management and sustainable development.

## Chapter Two: A Historical Perspective of Women's Access to Resources

### *Colonial Policies and Their Impact on Women's Socioeconomic Status*

It is necessary to engage with the history of colonialism in the developing world in order to assess women's current socioeconomic status in Sub-Saharan Africa and Latin America. The processes of conflict and accommodation involved in the colonial restructuring of traditional economies had a significant impact on women's economic activities and social options. Although generalizing across such diverse societies is inevitably controversial, virtually all researchers agree that women's workload increased substantially during the colonial period. In Africa, the colonial extraction of economic surplus was the underlying cause of women's (and men's) rising labor burden (Hay and Stichter, 1995). Men were favored for wage labor over women. Women's labor became increasingly marginalized as unproductive, invisible, domestic labor. Private property rights, education and new technology were given largely to men, although women continued to be central economic producers in most areas. When absorbed into wage labor, women were restricted to lower-paid, lower-status "women's work." Even when women became the primary breadwinners of families because of male migration, for instance, they continued to be defined in colonial practice largely as dependent housewives and mothers (Bandarage, 1999).

The administrative and economic systems introduced by colonial officials across much of Africa embodied a Western concept of state and society, with its distinction between public and private spheres and its complementary ideas about women, family and gender. The colonial administrative officials governed through indigenous male authorities, formalizing male institutions while ignoring their female equivalents. For example, customary law was encoded without women's participation. The system of private property rights was established based on the Western model, which historically gave the privileges to males. Thus, women not only lost traditional access to land, but failed to gain new property rights. The creation of cash economies contributed to further economic and political marginalization of African women. While the central position of men in the new cash economy was assured by an array of policy decisions, colonial legislation assured that women would play only a secondary role in the economy by denying them education, training, and access to urban employment (Hay and Stichter, 1995).

Colonial government policies were aimed at increasing agricultural commodity production and raw material extraction. The labor sought for these economic activities was invariably male. Men were encouraged to grow cash crops and were actively recruited for plantation work. Women remained in the villages, producing the basic foodstuffs required for subsistence (Bryceson, 1995; Gordon and Gordon, 1996). The deterioration in the status of women within the agricultural sectors of developing countries can largely be attributed to European settlers, colonial administrators and technical advisers. In encouraging cash crop farming and the productivity of male labor, the female agricultural labor force was largely neglected. The Europeans extended little sympathy for the female farming systems, which they found in many of the regions where they settled. Further, virtually all Europeans shared the opinion that men were superior to women in the art of farming. Thus, the technical advisers all focused on teaching modern farming techniques to males while women were ignored and continued to

utilize traditional farming methods. Consequently, the gap between labor productivity of men and women widened (Boserup, 1970).

In Latin America, direct colonial rule by Spain and Portugal lasted nearly three centuries, ending in the early or late nineteenth century (Mosse, 1993). Spanish colonization in Latin America brought with it an ideology of chastity and dependence which has continued to dominate women's lives today (Sontheimer, 1991). Colonial ideology, shaped by the moral precepts of Christian inspiration and Roman law, adhered to traditions of male supremacy. The expansion of private property privileged men and proportionally reduced women's access to land (Coquery-Vidrovitch, 1997).

The extractive operations introduced into the colonies, such as plantation agriculture and mining, required large supplies of labor. Colonial state policies were strongly pro-natalist — equating the value of African slave women with “breeding power.” Indeed, some “birth strikes” are known to have occurred among colonized women in the Americas and Africa, who refused to produce children for the white masters (Silliman and King, 1999). Economic marginalization and deepening poverty have not allowed women to challenge patriarchal social relations and in the absence of improvements in women's economic and social status, children become their primary source of social esteem, economic security and power (Banadarage, 1999).

Clearly, women's socioeconomic status during the colonial period was relegated to the base of the social hierarchy. We must remember, however, that in most pre-colonial societies, cultures and traditions worked to create communities in which women were routinely disempowered. In this regard, it would be incorrect to attribute women's low socioeconomic status solely to the colonial impact. What is clear, however, is that colonial ideology affirmed and institutionalized indigenous male authority and gave men the priority in the introduction of new cash and agricultural economies while women were sidelined. Because most postcolonial nations have simply carried on with the laws that were institutionalized during the colonial era, women's low socioeconomic status has persisted.

### *Women's Rights and Access to Resources*

Colonial capitalism drastically changed existing traditional patterns of land use and occupancy through government policies that favored the consolidation of scattered tracts in the hands of male owners. Colonial administrators failed to appreciate the significance of indigenous land tenure practices based upon principles of obligation and responsibility that guaranteed women access to land and control over certain crops. The Swynnerton Plan in Kenya set a precedent for male domination of income-producing agriculture. This was a land tenure reform initiated by the colonial government that largely eroded women's rights to land while solidifying land access to men. (Blomqvist *et al.*, 1996; Gordon and Gordon, 1996). Sachs (1996) explains that women's security on land, previously protected under customary land rights, is now tenuous; women now farm their husbands' land as an obligation rather than as a right. Although women farm their husbands' land, their lack of ownership deprives them of collateral to obtain loans, to acquire capital or inputs for their agricultural enterprises.

Colonial governments in Sub-Saharan Africa were successful in persuading Africans to consolidate land in men's names with the goal of increasing cash crop production. Traditional patterns of access to and control over land in most African societies showed unequal distribution between the sexes, with women's access to land usually being mediated by male family members. Colonial and state land reform policies used these traditional systems to legitimize male land ownership. In Kenya, colonial initiatives to privatize land in the 1950s and the government's move to create individual ownership in 1963, undermined women's rights to land. Land tenure reforms undermined customary land use in several ways. Men were registered as landowners with the justification that it was customary for men to own land and women not to own land. In Nyanza Province, almost all the land was registered by 1975 but only 6% of women had land registered in their names (Sachs, 1996).

In Zimbabwe, both precolonial and colonial governing policies set the stage for women's limited access to land. Shona society, although patrilineal and strongly male-dominated, granted women rights to use land and grow their crops. Under colonial law however, women were declared legal minors and often lost their customary rights to land. During the struggle for independence, women demanded that their interests be addressed by the postcolonial government and that land be allocated specifically to women. Control over land-use represented the focal point of resistance against the Rhodesian government in the guerilla war that was waged mainly in the countryside. Women in the village actively supported the guerilla movements, whereas men, who lived in towns, were largely removed from the war in the countryside. Following women's direct involvement in the resistance, including their activities in forming the rhetoric of the liberation movements, the postcolonial government passed legislation relating to women after coming to power (Sachs, 1996).

Currently, the redistribution of resources, particularly land, is an issue that must be addressed in many postcolonial nations. Where it has been undertaken, land tenure and reform has not achieved the desired results because land is still largely consolidated in male hands. Both the legal system and sociocultural practices work to severely restrict women's rights to property. Additionally, lack of finances has some influence in women's limited resources. In most cases, land may be too costly and, therefore, beyond the financial resources of the average rural woman. Many women cannot utilize legal services to procure land, for instance, in inheritance disputes, due to the high fees involved. Reform in land tenure obviously constitutes a concern for women in developing countries but unfortunately, many Third World governments do not consider this a matter of national priority.

### *Connecting the Past and Present*

Patriarchal dominance in the household economy, combined with forces of external exploitation, constrained rural women's economic options and confined most to a life of heavy labor and limited welfare. Patriarchal relations still govern the economic behavior of most rural households with men controlling and managing most agricultural resources. Women's attempts to increase their earning capacity by engaging in independent agricultural or off-farm activities are severely limited by lack of time and customary social constraints on their access to economic resources. Further, traditional practices, especially the belief that land must be controlled by the men of a local lineage group, continue to limit women farmers' ability to make efficient market-



oriented choices in deciding what to plant or sell and what inputs to invest in. Although women many enjoy a legal right to own and control land, few women actually have sufficient income and family backing to purchase and cultivate a plot of land on their own account. Contemporary state institutions reinforce patriarchal dominance over women farmers' labor and earnings. This excludes women from access to improved seeds, agricultural advice, fertilizers, pesticides, tools, credit and crop payments that are commonly dispensed only through cooperatives. Thus, tenacious remnants of precolonial and colonial discrimination against women work directly against the need to increase agricultural output, especially in the food sector (Hay and Stichter, 1995).

The tendency to focus farming improvements on the male sector while the female sector persists in traditional low-productivity methods enhances the prestige of men while lowering the status of women. Ultimately, men represent modern farming in the rural areas while women represent the old drudgery. It is not just the methods of agricultural training and instruction that are responsible for the resultant polarization of sex roles, with men at the progressive end and women at the traditional end. The spread of primary school education helped create both a technical and cultural gap between the sexes since more males than females were encouraged to go to school. Through the discriminatory policy in education and training, Europeans created a productivity gap between male and female farmers, and subsequently this gap seemed to justify their prejudice against female farmers (Boserup, 1970).

The table that follows gives percentages of illiteracy for women and men in selected countries of Sub-Saharan Africa and Latin America.

Table 3: Illiteracy Percentages by Gender, 1990

Country	Women	Men
<i>Sub-Saharan Africa</i>		
Angola	72	44
Benin	78	56
Botswana	43	21
Burkina Faso	92	73
Burundi	80	53
Cameroon	53	28
Central African Republic	76	49
Chad	69	41
Congo	44	25
Côte d'Ivoire	74	52
Djibouti	75	51
Ethiopia	79	62
Gabon	55	—
Gambia	88	50
Ghana	51	17
Guinea	81	53
Guinea Bissau	61	35
Kenya	34	17
Lesotho	41	21
Mali	86	69
Mozambique	84	51
Nigeria	58	37
Rwanda	70	48
Senegal	80	61
Sierra Leone	84	58

South Africa	23	21
Sudan	74	52
Swaziland	27	25
Tanzania	47	23
Uganda	52	30
Zaire	37	16
Zambia	33	17
Zimbabwe	26	14
<i>Latin America</i>		
Bolivia	27	11
Brazil	19	18
Chile	6	5
Colombia	13	12
Costa Rica	6	6
Cuba	4	4
Dominican Republic	23	24
Ecuador	13	9
El Salvador	43	36
Guyana	3	2
Haiti	63	59
Honduras	32	32
Jamaica	12	21
Nicaragua	35	36
Panama	10	9
Paraguay	14	9
Peru	22	8
Trinidad & Tobago	4	2
Venezuela	9	8

*Source:* Adapted from Seager, J. (1997). *The State of Women in the World Atlas*. London: Penguin.

In Zimbabwe, the government passed the Legal Age of Majority Act, which was the major piece of legislation drawn up in direct response to women's involvement in the resistance. It conferred adult status on African women over the age of eighteen years. Such legislation, however, proved more effective for addressing the needs of urban women. Rural women seldom benefited from such legislation because it was in contradiction to traditional law and the authority of chiefs and headmen in rural areas. Rural women today express reluctance to use courts because they perceive that when women do, they are generally unsuccessful, must pay court costs, and are open to ridicule. These laws fail to change the lives of rural women substantially because women remain ill-informed about the degree to which the state could support them. Also, their deeply ingrained beliefs about marriage and inheritance, material poverty and lack of education bar them from using legal channels. For rural women, gaining access to land represents a major need. Though the government has set up land resettlement schemes to address the problem of land access, these are not specifically designed to recognize women's needs, and actually grant women rights to land largely through their husbands (Sachs, 1996).

The colonial ideology affirmed indigenous male authorities and excluded women from participating in the socioeconomic sphere, which contributed to the current gender gaps in political participation at both local and national levels. Very few women participate in decision-making, an arena that has long been regarded as male domain.

The table that follows shows the gender gaps in political participation for selected countries from Sub-Saharan Africa and Latin America.

Table 4: Gender Gaps in Political Participation

Countries	Year women received right		Women in government		
	To vote <sup>a</sup>	To stand for elections <sup>a</sup>	At all levels <sup>b</sup>	At ministerial level <sup>b</sup>	At sub-ministerial level <sup>b</sup>
			(%) 1996	(%) 1996	(%) 1996
<i>Sub-Saharan Africa</i>					
South Africa	1930	1930	7.0	1.0	7.5
Swaziland	1968	1968	7.5	0.0	13.6
Namibia	1989	1989	11.4	8.7	12.3
Botswana	1965	1965	13.5	7.7	15.4
Gabon	1956	1956	7.7	3.3	11.4
Lesotho	1965	1965	14.6	0.0	18.2
Zimbabwe	1957	1978	11.6	8.3	14.0
Ghana	1954	1954	9.6	10.3	9.4
Cameroon	1946	1946	4.5	2.6	5.3
Congo	1963	1963	6.5	7.4	5.3
Kenya	1963	1963	5.8	3.4	6.6
Congo	1967	1970	3.4	8.0	0.0
Sudan	1964	1964	1.7	2.4	1.3
Togo	1945	1945	3.0	4.3	0.0
Nigeria	1958 <sup>Y</sup>	1958 <sup>Y</sup>	6.2	7.7	5.6
Zambia	1962	1962	8.4	7.7	8.6
Senegal	1945	1945	5.6	6.7	4.2
Côte d'Ivoire	1952	1952	7.1	8.3	6.8
Benin	1956	1956	14.9	19.0	13.3
Tanzania	1959	1959	9.6	10.5	8.9
Djibouti	1946	1986	0.9	0.0	1.0
Uganda	1962	1962	8.9	10.7	8.1
Malawi	1961	1961	4.3	3.6	4.7
Angola	1975	1975	4.9	10.7	1.8
Guinea	1958	1958	13.0	15.0	11.5
Chad	1958	1958	4.3	8.7	0.0
Gambia	1960	1960	18.9	18.8	19.0
Rwanda	1961	1961	10.7	8.3	12.5
Central African Rep.	1986	1986	4.9	8.0	2.4
Eritrea	1955 <sup>Y</sup>	1955 <sup>Y</sup>	7.8	18.8	4.2
Guinea-Bissau	1977	1977	11.9	8.0	13.2
Mozambique	1975	1975	12.8	4.0	14.7
Burundi	1961	1961	5.4	10.3	0.0
Burkina Faso	1958	1958	11.5	9.1	11.9
Ethiopia	1955	1955	8.9	6.7	9.6
Niger	1948	1948	10.9	14.3	10.0
Sierra Leone	1961	1961	5.9	3.8	6.5
<i>Latin America</i>					
Costa Rica	1949	1949	27.2	11.1	35.2
Trinidad & Tobago	1946	1946	13.8	16.0	12.5
Venezuela	1946	1946	14.5	11.1	17.9
Panama	1946	1946	9.4	16.7	6.5
Colombia	1954	1954	20.5	12.5	22.6
Chile	1949	1949	10.3	14.3	8.5
Argentina	1947	1947	5.2	0.0	5.6
Uruguay	1932	1932	13.7	6.7	16.7

Table 4 (Continued)

Countries	Year women received right		Women in government		
	To vote <sup>a</sup>	To stand for elections <sup>a</sup>	At all levels <sup>b</sup>	At ministerial level <sup>b</sup>	At sub-ministerial level <sup>b</sup>
			(%)	(%)	(%)
			1996	1996	1996
Cuba	1934	1934	9.1	2.7	11.9
Ecuador	1967	1967	3.4	6.2	2.8
Brazil	1934	1934	13.7	4.3	15.1
Peru	1955	1955	13.2	5.6	15.5
Jamaica	1944	1944	14.3	5.6	18.4
Paraguay	1961	1961	4.3	6.7	3.7
Dominican Republic	1942	1942	9.8	4.0	11.9
El Salvador	1939	1961	26.8	6.2	27.0
Bolivia	1952	1952	7.3	0.0	8.3
Honduras	1955	1955	14.1	10.0	15.9
Guatemala	1946	1946	16.7	13.3	22.2
Nicaragua	1955	1955	17.4	15.8	17.9
Haiti	1950	1950	22.2	29.4	15.8

† No information or confirmation available.

a. Refers to year in which right to election or representation on a universal and equal basis was recognized. In some countries, confirmation and constitutional rights came later.

b. Including elected heads of state and governors of central banks. For countries for which the value is zero, no female ministers were reported by the United Nations Division for the Advancement of Women; this information could not be confirmed by the Human Development Report Office.

Source: Adapted from United Nations Development Program (1999). *Human Development Report 1999*. New York and Oxford: Oxford University Press.

It is doubtful if women's access to land will guide public policies of land privatization. More central and practical for the majority of rural women are policies relating to common property and land distribution. Once private property governs access to land, the structural conditions are set for continued concentration and expropriation of land through market forces and state policies. The result is differentiated access of households to land. In Sub-Saharan Africa and Latin America, numerous rural women live in households with limited or no access to land because of severe inequalities in land ownership. Various land reform programs designed to redistribute land to the landless or near-landless households largely fail to benefit women directly. In various Latin American countries, policies of land reform target men as the principal direct beneficiaries. Despite variations in political motivations, extent of rural households affected and organization of production, men continue to be the primary beneficiaries even in socialist countries such as Cuba and Nicaragua that specify rural women as beneficiaries. As a consequence of limited opportunities, many young women leave rural areas to seek employment in urban areas. When they earn money, they remit it to their rural households (Sachs, 1996).

Issues of private property, land distribution and reform programs that are designed to benefit women are yet to be conducted with great efficiency. Sociocultural practices however constitute a primary force in any initiative to grant women increased property rights. The current laws in postcolonial nations are partly based on customary law, which is characterized by female bias with regards to property rights. This is a major stumbling block to women's quest for resources.

## Chapter Three: Women and Land (Agriculture)

Agriculture forms a central aspect in analyses of WED. This is because it is the mainstay of most developing economies and women are the primary food producers both for subsistence and for large-scale. The goal of national food self-sufficiency can never be attained unless there is concerted effort by the governments of developing countries to restructure policies and development plans in a manner that places women at the center of agricultural productivity and environmental conservation. Thus, the food question cannot be separated from the environmental question (Nzomo, 1992).

An examination of women's role in agricultural production reveals that their productivity can be enhanced if certain measures are effected. Low levels of technology, lack of agricultural extension services, limited capital and credit facilities, and inadequate farm inputs all act as constraints to increased productivity. Additionally, the multidimensional nature of women's roles puts a high demand on their time. It becomes necessary, then, for development plans to re-examine and re-evaluate women's current roles in agricultural production and environmental conservation with the aim of identifying how their activities can be enhanced to facilitate national food sufficiency while preserving the environment. This chapter, therefore, focuses on rural women's agricultural activities given its significance in national food production. Case studies are used to present some of the concrete, material conditions of women both in Sub-Saharan Africa and Latin America. The constraints that women experience in their role as producers also becomes evident.

Although women do the majority of agricultural work, men, for the most part continue to own the land, control women's labor and make agricultural decisions supported by patriarchal social systems. Both in Sub-Saharan Africa and Latin America, state policies often explicitly support these patriarchal family farms through extension programs, government loans and marketing policies. Scholarly work on women in agriculture during the past decade has focused primarily on documenting the variety and extent of women's contributions in particular localities. Despite these documented efforts, few state policies have been established to improve the lives of farm women, thus illustrating that merely documenting the extent of women's work fails to destabilize patriarchal authority. The centrality of gender relations can be incorporated into theoretical understandings of family farms (Sachs, 1996).

Women are the main producers and providers of food and supporting research confirms that 70-80% of all subsistence farming in Sub-Saharan Africa is carried out by women. Although traditionally women's agricultural work has been confined to subsistence, women have been increasingly involved in cash crop farming (Veit, 1998). In Latin America and the Caribbean, women grow 50% of the household food. Further, women constitute the backbone of the rural food system in developing countries and are the caretakers of domestic animals as well. They are the key elements in the food chain and are involved in planting, processing, preserving and preparation of food (Haider, 1996).

The table that follows shows the proportion of economically active women working in the agricultural sector in selected developing countries.

Table 5: Proportion of Economically Active Women Working in the Agricultural Sector (1994 Percentages)

Countries	Percentages	
<i>Latin America</i>		
Cuba	Chile	
Honduras	Guatemala	
El Salvador	Nicaragua	
Costa Rica	Panama	
Venezuela	Colombia	Less than 10%
Chile	Argentina	
Uruguay	Dominican Republic	
Puerto Rico	Barbados	
Trinidad & Tobago	Guyana	
Brazil	Mexico	
Cuba	Jamaica	10-25%
Ecuador	Paraguay	
Peru		
Bolivia		26-50%
<i>Sub-Saharan Africa</i>		
Ghana		
South Africa		10-25%
Namibia		
Mali	Nigeria	
Cameroon	Central African Republic	51-75%
Senegal	Guinea	
Sierra Leone	Liberia	
Burkina Faso	Chad	
Sudan	Eritrea	
Djibouti	Somalia	76-90%
Ethiopia	Kenya	
Uganda	Tanzania	
Gabon	Congo	
Angola	Zambia	
Zimbabwe	Botswana	
Gambia	Guinea-Bissau	
Niger	Zaire	
Rwanda	Burundi	90%
Malawi	Mozambique	
Madagascar		

Source: Adapted from Seager, J. (1997). *The State of Women in the World Atlas*. London: Penguin.

Following are case studies that illustrate the central role women play in agricultural production, which forms a central sector of natural resource management in both Sub-Saharan Africa and Latin America. Several crucial factors are highlighted by these case studies. Despite the high demands and multifaceted nature of their work, it will be noted that women's contribution to agricultural production is often rendered invisible.

### *Women Farmers in Botswana, Central Africa<sup>1</sup>*

Over most of Botswana, rainfall is sparse and erratic, with unpredictable fluctuations within any one season and between years, interspersed with periodic droughts. Crop yields therefore tend to be low. The development of improved technologies is difficult because of low and erratic rainfall coupled with moderate to low fertility of soils. Although both men and women have rights to cropland, they cultivate under somewhat different conditions. Women's labor must be spread among the fields designated for meeting household needs, their husbands' fields, and their own smaller plots. They might also keep a few domestic animals. Men tend to have better access than women to oxen for timely plowing, and although they may help plow their wives' fields, they are often absent. Many women have no access to oxen or donkeys for plowing or have access only through relatives. Those who can get access to a plowing team may lack the labor, cash or expertise to complete their own plowing adequately and in time.

In the past, agricultural researchers in Botswana concentrated on breeding seeds for uniform, monocrop cultivation, developing a package of related chemical inputs and fertilizers and tillage and planning practices by using ox-drawn equipment or tractors for row cultivation. It became increasingly clear, however, that appropriate strategies in areas with poor quality soil and erratic rainfall are more likely to require incremental change in complex systems, which necessarily mix a far wider range of crops and varieties. Under such circumstances, it becomes essential to include farmers in the research process. When farmers are allowed to have some substantial input in research projects, much wasteful effort is avoided and technologies that show real benefits in farmers' fields are used to a greater extent.

However, the business of scientists working together with farmers is not straightforward, especially where most farmers are women and scientists are men. Male scientists and fieldworkers, usually foreigners, may have attitudinal and cultural barriers to working directly with women. Women, on the other hand, may feel shy about speaking openly to male authority figures or may be checked by cultural customs from speaking out in public at meetings or discussions. There are also practical issues that contribute to the exclusion of women. Scientists and field staff working to civil service schedules may simply never be on the farm at the times when women are free to talk with them. It is not unusual for farmwomen to leave a lengthy interview session in order to attend to some other chore.

In the early 1980s, the Agricultural Technology Improvement Project (ATIP) was established to support a research team of local and foreign scientists to work on the improvement of crop-based farming systems. The team pioneered ways to bring farmwomen more fully into the technology development process. The researchers decided to experiment with different forms of farmer involvement and generally met with the various groups at monthly meetings to listen to the progress of each member. Problems experienced during the farming process were aired and solutions were proposed and assessed. As time went on, the researchers incorporated more of the farmers' own suggestions into the design and content of the trials.

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<sup>1</sup> Jiggins, J. (1994). *Changing the Boundaries: Women-Centered Perspectives on Population and the Environment*. Washington, DC: Island Press, pp. 217-238.

In the course of learning how to work with women farmers, the scientists became increasingly confident that women knew much that is important about agricultural and natural resource systems. Women's knowledge, based on acute and repeated observation, proved reliable. Male farmers do not share such knowledge because it is intimately linked to women's specific tasks and responsibilities. The scientists came to appreciate better the necessity of encouraging women to speak for themselves about their own experiences and priorities.

Women were very committed to attending monthly meetings and attending the trials unlike men. When a topic arose about which the men felt they had relatively more expertise, they tended to dominate the discussion but were less forthcoming than the women in bringing forward their problems. Women were eager for information and wanted to make the most of what, for many, was their first contact with agricultural services. Eventually, researchers found that the women worked towards reducing their dependency on the research staff's initiative. They continued to meet well past the growing season and began working out their own plans for sharing what they were learning.

Participatory group processes encourage farmers, especially women farmers, in the analysis and development of farming systems and natural resource systems. Women proved to be very resourceful in the ATIP project. They were able to identify, characterize and describe nine natural resource systems in addition to describing soil types, microenvironments and economic enterprises associated with each of the nine systems. Women traced a continuing and complex flow of resources among the diverse resource systems. Together, the women and the researchers identified several researchable options for improving the natural resource base and, thus, agricultural opportunity. The ATIP project clearly illustrated what can be accomplished when women farmers are given an opportunity to work as valued partners.

### *Women Farmers in Western Zambia, Central-Southern Africa<sup>2</sup>*

Like almost all women in rural Zambia, the majority of women in the Western Province are farmers by custom, by necessity and by choice. In Western Zambia, as in many other African societies, a woman's status and her access to land and other resources, is based on marriage, lineage, and her ability to bear children. Policymakers and service providers in Zambia, like elsewhere in Africa, have neglected the role of women in agriculture. The vital contribution that women's farming makes to family welfare and national food security has remained virtually invisible. Large-scale agriculture and livestock surveys have rarely captured data on factors such as women's labor input, management practices or the crops that typically only women grow because of the underlying assumption of governments and technical assistance agencies that modern farming means "male" farming. Although the government of Zambia broadly supports special efforts to promote women's development, agricultural policy still does not explicitly recognize the role of women farmers.

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<sup>2</sup> Leonard, A. (ed.) (1995). *Seeds 2: Supporting Women's Work around the World*. New York: The Feminist Press, pp. 17-28.



Nonetheless, while women continue to be neglected by mainstream agricultural development efforts, their role in farming is becoming more critical. Complex changes in the socioeconomic sphere are leaving an increasingly large number of women as sole providers for their families. Excessive demands on women's time and energy frequently leave women socially isolated as well as economically marginalized. The majority of women experience hardships that mainstream agricultural services have been slow to recognize or respond to, for instance: (a) heavy workloads, long working days and little access to the cash needed to hire labor; (b) lack of access to credit and financial services, usually related to problems of mobility, women's status under the law, and the type of financial services offered; (c) agricultural extension agents are mostly male, are reluctant to break cultural taboos about working with women who are not family members, and have a tendency to hold stereotypic views of what women can and should do; (d) lack of access to training and agricultural inputs such as fertilizers; (e) women lack confidence in asserting themselves and taking on new roles.

The Women's Extension Program (WEP) in Western Zambia was designed as a strategic intervention of limited duration that would bring about change within the mainstream of the Department of Agriculture's programs. This was to be accomplished through advocacy, training, information, statistics, persuasion and liaison. The WEP operates through the existing structures, staff and projects of the Department of Agriculture. Its influence is based on persuasion and cooperation, rather than formal power.

Regular meetings are conducted by the WEP to coordinate transport, share ideas and revise plans, and the WEP has also been able to initiate some gender training. The WEP encourages colleagues within the department to deliver field-level training in ways that are compatible with women's time constraints, domestic responsibilities and educational experience. Mobile training programs offer an alternative to more traditional residential courses and are proving to be successful with both staff and farmers. Agricultural assistants are encouraged to monitor women's participation in residential training courses, field days and demonstrations.

The WEP has had many significant accomplishments such as providing women with access to training in ox plowing. In addition, the cultural gap between women and the male agricultural assistants has largely been bridged. Women now have greater access to existing agricultural services and their organizational skills and leadership capacity has been significantly developed.

### *Women in Agriculture in Trinidad and their Contribution to Agricultural Production*<sup>3</sup>

Women have always been involved in agriculture in the Caribbean. Their roles have been continuously modified by colonization, plantations, new crop introduction, education, technology, migration, tourism, and industrialization. Only in the past decade have several gender-related studies been conducted in the region to identify and quantify the inputs made by women in food production. Generally, as in most other developing countries, rural women in Trinidad are less educated than men and as many as 42% of women in the case study had

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<sup>3</sup> Harry, I.S. (1993). "Women in Agriculture in Trinidad: An Overview" in Momsen, J. (ed.), *Women and Change in the Caribbean: A Pan-Caribbean Perspective*. Bloomington and Indianapolis: Indiana University Press, pp. 205-218.

received no education. Although Trinidad produces a diversity of crops grown both for domestic consumption and export, little attention is paid to the female role in agricultural production and to the stabilizing role women can continue to play in a declining industry.

Land tenure is central to farming in Trinidad and largely determines the kinds of crops to be planted. Land is passed from generation to generation, thereby ensuring a continuation of farming. Most female landowners inherited it from their late spouses and though it is possible for women to buy or lease land in Trinidad, few women have done so because of financial constraints and traditional practices. Most of the farms owned by women tend to be smaller in size than those owned by men. In Trinidad, cultural practices dictate the kind of equipment, chemical inputs and skills that are needed. Most of the vehicles and farm equipment are more readily available to men than women. In Trinidad, as is many other parts of the developing world, women do not use new technology as frequently as men. Few women farm owners spray their crops because they claim it is dangerous for their health.

Major crops grown are sugarcane, cocoa, tobacco and rice. Women's labor is highly utilized in soil preparation, planting, harvesting and loading of cut cane for transport to selling points. Other female tasks include drying and winnowing of grain. In addition to plant care, women are generally involved in the rearing of domestic animals and keeping of small manageable animals is seen as an extension of "housework" for most women. This includes cleaning, feeding and milking. Besides all this, women have to deal with housework and childcare. An analysis of work patterns of Trinidadian farm women ultimately revealed that they worked 12-15 hours per day with half the time spent in the field and the other half on childcare and household chores.

#### *The Amuesha of the Upper Amazon, Peru*<sup>4</sup>

Peasant households in Latin America reflect the great diversity of Latin American cultural systems and the highly uneven land distribution. Gender relations in peasant households help maintain the survival of family farms and simultaneously bolster the capitalist system. Women remain on small family farms, engaging in subsistence agriculture and providing uncompensated reproductive labor whereas their husbands earn income below family subsistence wages in towns. Peasant production, particularly women's labor, furthers the development of the capitalist agricultural sector.

Women have a second-class role in the economy and society of Peru although their status and economic activities vary in the extremely different cultural zones of the country. While women are often involved in family farming and animal husbandry, they do not fully benefit from their labor. Men's work is more highly valued than women's and both sexes explain this as the result of men's strength and their ability to use heavier tools (Creevey, 1996).

The Amuesha of Peru's Upper Amazon maintain fairly traditional gender roles in subsistence agriculture. However, single Amuesha women cross the gender-defined boundaries that have traditionally determined participation in subsistence. Single women are mainly

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<sup>4</sup> Salick, J. (1997). Subsistence and The Single Woman Among the Amuesha of The Upper Amazon, Peru" in Sachs, C. (ed.), *Women Working in the Environment*. Washington, DC: Taylor and Francis, pp. 139-153.

impoverished widows, single mothers who have no access to land and illegitimate female children without any land rights. Women generally plant, weed and harvest subsistence crops. The abandonment of women may be the major cause for the “feminization of farming” in Latin America, partly caused by the seasonal migration of men and wage-labor opportunities, causing women to be more heavily involved in agriculture.

Without men to cut and burn primary forest and old secondary forest, women tend to take on time-consuming tasks of clearing brush and continually cropping and weeding older fields. They most often concentrate their efforts on small lowland fields. This is because recuperation of soils and elimination of weeds, insects, pests and pathogens are thought to be quicker on better alluvial soils, allowing farmers to productively clear bush fallows rather than tall forests.

Crop density and crop cover tend to be higher on the women’s fields. Women also cultivate fields longer, repeating successional stages. Consequently, field abandonment becomes less frequent. Women tend to plant very densely, using all available microsites for varied appropriate crops. In addition, women cultivate home gardens and concentrate on fruit production and dietary diversity. When other forms of agriculture are restricted, the home garden can take on special importance and contains much diversity.

The subsistence strategies that are characteristic of the Amuesha women farmers range far beyond agriculture, for instance, highly developed skills of opportunism, heavy reliance on their children for labor, and food acquisition through barter and purchase. They are quick to adapt to whatever new opportunities may come. These may include experimenting with new crops, new cultivation techniques and new varieties. Where development projects are sincerely designed to incorporate women, the Amuesha women are willing participants in such projects.

Women who experience continual labor and time shortages tend to rely heavily on child labor for help in cultivating fields. As a result, schooling for children may be neglected because of a lack of resources needed to send children to school and the need for labor in farm activities. Since subsistence agriculture is inadequate to sustain villagers, bartered labor and goods are the most traditional method of obtaining goods or services within the native communities. Women thus use various products to repay debts. They also grow and collect a number of common medicinal plants used to cure their families.

These case studies indicate that women’s activities within the agricultural sector serve several purposes such as meeting both subsistence and national food needs, promoting cash crop farming, and environmental conservation. Even though women’s role in sustainable development is often unacknowledged, their environmental activities continue to form the thrust of sustainable development initiatives. The challenge, then, is that of reassessing their contributions at various levels. Only then can the true significance of their work be revealed in environmental management and development.

## Chapter Four: Women and Forest Resources

Women's involvement in forestry has emerged as an important policy concern for forestry and sustainable resource management in developing countries. Considerable progress has been made by closely examining women's roles in forestry and identifying the positive contributions that their participation makes in enhancing the returns from forestry and introducing more suitable management systems in addition to meeting their varied needs (Sachs, 1997). However, some factors mitigate against women participating fully in forestry projects such as: lack of land, time and money; poor organization; restricted access to political power and a limited ability to influence decision-makers; higher rates of illiteracy than men; lack of collateral to offer for credit, and; restrictions in the jobs they are allowed to do and the distances they are allowed to travel (Sontheimer, 1991).

Jiggins (1994) argues that there is a direct and necessary connection between the amount of energy women expend in managing the household fuel economy and the amount of energy women have available for managing other domestic tasks and agricultural activities. Around the world, women are showing that they need not be the helpless victims of the larger distortions and are seizing the initiative. Women have proved that transformations are possible at the local level. Indeed, given appropriate policy support, these local transformations could be expanded to have an impact on the larger.

The case studies that follow present some of the concerns and strategies that constitute women's role in the management of forestry resources. Rural women in developing countries are primary collectors of various forest products such as fuelwood, fodder, cleaning materials (such as brooms), fruits, nuts, herbs and medicinal plants. Because women are continually engaging with forest resources, they have developed a more resourceful knowledge base about forest resources than men in the same locality. The case studies also highlight some lessons that could be utilized to further enhance the role of women in natural resource management and increase their productivity while at the same time facilitating sustainable development.

### *Plan Sierra Development Project, Dominican Republic<sup>5</sup>*

Plan Sierra is an integrated rural development project with strong agroforestry and reforestation programs. In its early phases it developed innovative approaches to agroforestry, soil conservation, and forestry training and extension. Although women were consciously involved in some aspects of the programs, their role and interests in other subsistence activities were often overlooked. Basically, women participate with men in the harvesting of annual crops. Other duties for women include the raising of domestic animals, tending of home gardens, and collecting of fuelwood and water.

The project included strong agricultural, reforestation and soil conservation concerns from the outset. Agroforestry initiatives emphasized coffee systems. Support services for agroforestry and reforestation included soil conservation, nursery development, employee

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<sup>5</sup> Fortman, L. and Rocheleau, D. (1997). "Women and Agroforestry: Four Myths and Three Case Studies" in Sachs, C. (ed.), *Women Working in the Environment*. Washington, DC: Taylor and Francis, pp. 193-211.

training and community education programs. As in many similar projects in Latin America, local women's participation in Plan Sierra was initially limited to health services and home economics. Women professionals were concentrated mainly in the health, education and rural organizations units. The maturation of the Plan Sierra programs and their respective inclusion/exclusion of women provides some insights into issues that need to be addressed in future agroforestry/development projects in Latin America. The key concerns are access to employment, training, credit, land, and appropriate technical assistance.

Initially, local women were hired as home economists, secretaries, cooks and cleaners. Eventually, many of them were hired by the nurseries to water seedlings and fill up polythene bags with potting soil. Male nursery supervisors considered women to be more efficient and patient at such tedious tasks. Some women who originally took this non-traditional work with reservations later acquired an active interest in plant propagation techniques. This trend was encouraged by administrators and technical staff. They trained a group of paratechnical women horticulturists who became known as "budders and grafters." The job gradually attained a high status and was accepted as a woman's task, setting a precedent for inclusion of more women in technical nursery work.

Women are actively sought as volunteer laborers and promoters for community reforestation. Through the teachers' training courses, women also become involved in technical training and project implementation. About half of the teachers in the Sierra were women. Eventually, however, it was not the women who benefited from the activities but the project. This was not by design but by default. Women were not consulted in project design and their concerns and needs were, therefore, not adequately addressed in the technical programs.

Cottage industries, such as weaving and food processing were also undertaken by the women. Some women complained about lack of access and/or dwindling, unreliable supplies of palm fiber. Palms were also important sources of wood, food and animal fodder, and were located in pastures or fallow land owned by neighbors or relatives. Although the women had free access they had no guarantee of future access and no control over cutting and replacement. Supplies were sometimes threatened by the felling of palms for cheap construction material. Many local men had decided to use the trees for construction or as a source of cash.

The fuelwood shortage hit hardest in the small holdings. Some women had closed down their cassava bread processing operations due to lack of fuelwood and the high cost of purchasing fuelwood. Others complained about the increasing time and effort necessary to secure the same quantity of fuel for home use. Gathering, selection, consumption and the potential for subsistence production of fuelwood were not directly addressed by any of the project programs.

Initially, the fuelwood problem was not recognized as a high priority issue. When the issue did arise, there was a lack of training and experience among technical staff in the choice, propagation, management, and promotion of fuelwood species, particularly for planting on farm. Nor were there any women foresters available within the country. Consequently, a major opportunity to involve and serve local women in agroforestry and reforestation was lost.

Women were more likely to benefit directly from the technical assistance if their cash income or food sources coincided with those most often managed by men. For example, those who had coffee holdings were invited to attend training courses for improved agroforestry systems based on coffee. Although women were consciously included, they were not considered to be the main clients of the training/extension/credit program. In effect, they were given equal access to training and equal formal commitments for technical assistance in a field considered to be a man's domain. Obtaining credit proved to be more difficult depending on marital status. The Plan Sierra Project was not able to change both of these aspects. Although some selected subsidized credit and land reform programs were included within the overall project, lack of access to credit and land constituted serious obstacles to implementation of on-farm or community tree-planting projects by and for women.

The project illustrated both the possibility for employment and training of women and the need to utilize experience in project definition, technology design and extension/implementation. Plan Sierra demonstrated that even in regions where women do not traditionally till the soil, they can and should be offered employment and training in nursery and horticultural techniques, some of which can be identified as women's occupations. The project indicated the need for prior consultation with women about issues of immediate concern and about potential action to solve problems or otherwise improve their situation. In many cases, this would imply a reordering of priorities in project identification, technology design and species selection criteria to better meet the needs of rural women. Employment and training of women in fields already recognized as important, but not exclusively defined as men's work, could then be extended to training of women for more flexible roles in agroforestry extension programs for rural families, including subsistence farmers and small holders.

*Women in the Rubber Tappers' Defense of the Forest in Xapuri, Brazil*<sup>6</sup>

In Brazil, a grassroots women's movement fought against the destruction of the Amazon forest. The movement was a response to the federal government's Amazon development policy of the 1970s and 1980s. This promoted expansion of capital-intensive agricultural enterprises in the Amazon, which required clearing of large tracts of forest. Women were crucial in the defense of the forest because they were dependent on the forest for various resources including tapping rubber and gathering Brazil nuts. In the rubber tappers' social movement, women played critical roles as union members, elected leaders, teachers, church organizers and rural health agents.

Women and children demonstrated by gathering at the site of a forest clearing. Confrontations would develop and police would be called in whereupon women and children would form the front line of defense, placing themselves between the forest and the ranchers' chain saws. They were openly defiant in their resolve to save the Amazon rainforest. National and international environmentalists arose in support of the women and after a national convention in 1985, a proposal was put forth to create a new type of land reform which involved the establishment of extractive reserves. With the establishment of the first extractive

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<sup>6</sup> Campbell, C. (1996). "Women in The Rubber Tappers' Defense of The Forest in Xapuri, Acre, Brazil" in Rocheleau, D., Thomas-Slayter, B. and Wangari, E. (eds.), *Feminist Political Ecology: Global Issues and Local Experiences*. London and New York: Routledge, pp. 28-36.

settlements in 1987, and extractive reserves in 1990, the movement achieved major victories. The reserves grew out of a grassroots movement based on collective use and which did not require division of the land into smaller individual plots.

The defense of the forest was only one priority for the Xapuri women's movement. The movement also sought to protect and improve the lives of the forest-dwelling rubber tappers by establishing political and economic autonomy. Through the creation of a rural workers' union, construction of schools and clinics, and the establishment of the region's first agro-extractive cooperation, the movement has been able to realize significant life changes for participants. In many areas, educational, health, marketing and employment opportunities have greatly improved. The important and varied roles that women have played have nonetheless gone largely unnoticed by researchers, environmental advocates and even by the women themselves who have historically remained mostly in the background of the economic and political arenas.

### *The Greenbelt Movement, Kenya*<sup>7</sup>

The Greenbelt Movement (GBM) in Kenya is a grassroots environmental movement with a long-term agenda that encompasses multiple objectives: to avert deforestation through planting trees; to promote indigenous trees and shrubs in order to prevent extinction; to promote the cultivation of "multipurpose trees" to increase public awareness of environmental issues, especially in relation to population pressure, poverty, migration, food and fuel; to promote socioeconomic development; to create a positive image of women, and; to make tree-planting an income-generating activity for women as well as help the rural poor and handicapped.

The GBM's longevity offers a critical insight into the fundamental strengths and weaknesses common to most groups involved in community tree growing and indigenous-based conservation activities. It focuses on campaigns and local participation of women in the establishment of "greenbelt communities" and in the operation of small tree nurseries. It sees women as a powerful leading force for conservation. Although there is participation by men as well, women continue to be the principal activists both in the leadership and organization of the project activities. The GBM was started in 1977 and by 1982, had established 500 nurseries and 239 "greenbelts".

Kiambu District located in Kenya's Central province is one of the districts where greenbelt activities are well established. Women provide 60-70% of farm labor in the district both for food and cash crop production. The quality of their lives as well as their environment depends entirely on how women organize their day-to-day activities. The district faces erosion and conservation concerns because of the hilly topography and population pressure. Thus, there is a great deal of pressure on both land and forest resources.

Women reacted to this situation by adopting an integrated approach through a variety of multiple landuses such as multiple cropping, inter-cropping, bench terracing and cultivating both

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<sup>7</sup> Hyma, B. and Nyamwange, P. (1993). "Women's Role and Participation in Farm and Community Tree-Growing Activities in Kiambu District, Kenya" in Momsen, J.H. and Kinnaird, V. (eds.). *Different Places, Different Voices: Gender and Development in Africa, Asia and Latin America*. London and New York: Routledge, pp. 30-45.

annual and perennial crops. The concern for the quality of the environment, coupled with fuelwood and fodder shortages during the dry season, have made the women sensitive to dealing with land and forestry resources. In addition, trees are used as windbreaks, for fencing, and for shade and construction materials. This supports the notion that fuelwood shortages cannot be isolated from other problems facing the women in the rural areas.

Approximately 2,000 women's groups with a membership of 70,000 exist in Kiambu District. These multipurpose groups are engaged in both small and large-scale development activities such as basketry, pottery, bee-keeping, brick-making, tree growing and nursery management. The activities and efforts of the women farmers are sustained by the assurance that the benefits of their labors are for the collective good of themselves. Many of the projects reveal an integration of traditional practices and modern concepts of forestry management. The women's knowledge of tree species and suitable ecological conditions is an advantage that they have used in selecting the area and type of trees they grow, even with food and cash crops. These activities have been extended and used to improvise the women's low incomes through the sale of forestry products.

The women's groups have expressed several reasons for their participation in tree-growing activities. First, they are aware of the benefits of tree-growing such as soil and water conservation. Second, they have the desire to improve the quality of the environment for future generations. Third, they recognize the benefit of multipurpose tree activities in generating income, improving soil quality and meeting a wide range of household needs such as fibre, fuelwood, shelter and medicine. Fourth, the desire to grow and preserve indigenous tree species is a widely felt-need. Fifth, it is felt that modern methods of tree growing are not suitable for their needs and their active participation enables them to learn new issues while preserving the old and building on existing strengths and capabilities. Sixth, the recognition and assistance of conservation activities by the government has encouraged the women. The government occasionally provides seedlings and extension workers and services, tailored specifically to women and their needs.

Various constraints have been identified by the women's groups. Lack of sufficient inputs; infestations; shortage of water, manure, fencing and containers; lack of organizational and management skills; lack of proper training; scarcity of land; time constraints; lack of capital to enhance activities, and; irregular extension services. Heterogeneity within each individual group as well as between groups, with respect to age, education, status and motivation, proved somewhat problematic. Groups with members who are "better off" are favored in terms of funding and extension services. Disharmony and lack of cohesion arise. In addition, institutional and organizational support for education and training of women in modern community forestry activities is far from established. Factors such as the lack of access to and participation of women in the local village council and district development committees, limit the effectiveness and efficiency of the project activities. Only a few professional foresters are women and the range of training available to rural women is very limited. Community tree nurseries also lack sufficient funds for staff help, seed production and land for expansion.

It is clear that women have different values, needs and strategies for action in forestry activities. However, there is a need to review and change bureaucratic forestry institutions and



their policies and to increase the number of women forestry professionals and extension agents. These changes are necessary in order to incorporate women's community forestry activities into the mainstream of development. The institutionalization of community forestry must be designed specifically in relation to women's needs and their environmental concerns. Planning programs need to reflect the existing indigenous knowledge of tree management and conservation practices of both women and men. An integrated approach to women's local concerns in agricultural development is more likely to be beneficial in the long run. More research is needed into agro-forestry practices and into possible innovations involving women and men. This requires decentralized research and development programs for developing communal or farm forestry designs that respect the different objectives of rural people experiencing different circumstances in their own environment.

## Chapter Five: Women and Water Resources

Women's participation in water supply and sanitation projects serves as a suitable entry point for activities designed to rehabilitate environmentally degraded ecosystems. The empowerment of women then becomes the central issue in an ecological approach to solving water and sanitation problems (Steady, 1993).

As primary water carriers, managers, end-users and family health educators, women play a paramount role in water supply and sanitation (WSS) facilities. Further, by virtue of their domestic responsibilities, they are in constant contact with polluted water, hence the group most vulnerable to water-borne diseases. In view of their heavy involvement as water carriers and collectors, it is crucial that women are involved in the planning, operation and maintenance of WSS facilities. Since women are the primary movers of water, it is vital that they receive training in the basic maintenance of facilities and their surroundings. The crucial issue is not incorporating women into these activities since they are already active participants. Rather, women's participation must be made more effective, easier and more productive (Sontheimer, 1991).

Women's water-related work has been taken for granted and denied an economic and social value. Other problems are the lack of consultation with women regarding technical aspects, which results in impractical solutions, and the overall failure of WSS facilities. Local women's customs, preferences and traditions are not considered in choosing the technical design and location of projects. Care taking, local and site management, are major areas where women can and should participate in the local management and maintenance of water projects (Sontheimer, 1991).

The following case studies illustrate women's multidimensional role in water supply and management. In addition, the studies also highlight some of the constraints women experience within the social structures in their role as environmental resource managers as well as lessons that can be learnt by incorporating women more fully into the design and implementation of community-based environmental projects. These case studies, as has been noted elsewhere, also point to the invisibility of women in their multidimensional roles.

### *Women and Irrigation in Highland Peru*<sup>8</sup>

Given the importance of water in Highland Peru and the increasing involvement of women in irrigation, women's roles in water management have received little attention from rural women's organizations, government officials or students of Andean irrigation. Women in Highland Peru are structurally subordinate to men by patriarchal mechanisms that link access to key institutions to sex role stereotyping and the sexual division of labor. Irrigation constitutes one of the key tasks that are traditionally assigned to men. Such tasks serve as gateways to critical resources. Women are prevented from performing key tasks. In this way, women continue to depend on men for resource allocation and their power and productivity is thus limited.

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<sup>8</sup> Lynch, B.D. (1997). "Women and irrigation in Highland Peru" in Sachs, C. (ed.), *Women Working in the Environment*. Washington, DC: Taylor and Francis, pp. 85-102.

In the Andean highlands, technical decisions about irrigation are made in a social context and reflect the priorities of the decision-makers. User rights are vested in land rather than in individual users and landowners must participate in system upkeep to exercise existing rights to water. Because water rights adhere to parcels rather than to individuals, obligations and decision-making *vis-à-vis* the system are vested in the household rather than the individual. Those who contribute their labor to operation and maintenance of small-scale irrigation systems and who make management decisions are a single set of individuals cooperating in a common endeavor. To the extent that decision-making is vested in the household as represented by the head (generally male), the interests of other household members in the water resource may be overlooked.

Definitions of women's work in Andean rural households, not to mention women's actual participation in agricultural work and management, depend upon the household's wealth and on the availability of family or hired labor. Most women who participate in irrigation are *de facto* or *de jure* heads of household — widows, or single women, or wives of migrants. Where household income is insufficient to hire labor and men are not available, women will participate in canal cleaning and construction in order to exercise their rights to water. Thus, a particular subset of rural women — smallholder heads of household — are most likely to participate in irrigation activities on the farm.

Women's uses of water are diverse, owing to the range of their economic activities in irrigated zones. Where care of domestic animals is often women's work, women use irrigation water for livestock as well as for crops. Where a domestic water source is lacking, women haul water from irrigation ditches. Women's work in on-farm irrigation is not restricted to delivering water to crops. Water theft is ubiquitous. Thus, irrigation entails not only taking water and moving it across the field but also preventing others from taking the supply. In this regard, surveillance and conflict management are crucial roles that women play in the small-scale systems. Another important water related task is the provision and transport of meals to the men working in the fields.

Although water management implies the acquisition, allocation and distribution of water, and the mobilization of the labor, cash and material resources needed to maintain and repair infrastructure, women are still largely excluded from these activities. Most of the officials in irrigation communities are men with a higher status in the community and women are, therefore, at a disadvantage when dealing with the bureaucracy.

Women's participation in water management thus depends largely on the extent to which they can exercise power within local government institutions that are increasingly shaped by a bureaucratic state. This in turn depends on the extent to which women have a voice in the new institutions, style of politics that prevails in the competition for the irrigation resources, and the position of women within the culture of the irrigation bureaucracy.

The participation of women in irrigation management continues to lag behind for several reasons. Societal norms in the highlands that define water management as men's work as well as sexist stereotypes make women appear as invisible to government officials. Since irrigation institutions at all levels are male-dominated, irrigation is not a sector where the state has

encouraged movement of women into a political sphere beyond the community. Nor has the state tried to use irrigation projects to mobilize peasant women. Further, irrigation issues are seldom enveloped in ideological controversy and do not involve the opening of new political spaces. The role of women within the irrigation bureaucracies is largely restricted to statistical analysis and to organizing and teaching them. They do not make it very far up in the hierarchy and have little input into system design and construction. Irrigation agencies attempt to co-opt women rather than encourage them to play central management roles.

Although women are increasingly enjoying more control over water in the farming systems than they did previously, this gain is being offset by other changes such as the declining ability of agricultural production to meet family subsistence needs. Male outmigration means that more women now participate in irrigation where it has traditionally been a male task. Women still play only token roles in system management because the gateway tasks in water management and access to resources are still under male control.

There are a number of crucial questions that need to be addressed from a feminist perspective: (a) do the physical infrastructure and social arrangements that characterize the systems satisfy these women's needs as consumers of water? (b) do women participate in irrigation management decisions? (c) what kinds of contributions are women obliged to make to keep the system functioning? (d) is women's control over irrigation infrastructure, water allocation and water delivery commensurate with the contributions they make to system development, operation and maintenance?

*Kochogo/Kakola Community Water and Sanitation Project, Western Kenya*<sup>9</sup>

About two-thirds of Kenya is semiarid and arid. Water development has, of necessity, to compete with other equally pressing national priorities. The Kochogo/Kakola Community Water and Sanitation Project was initiated in 1980 with the support of the Kenya Water for Health Organization (KWAHO). KWAHO addressed the combined aspects of water, health and sanitation for the well-being of the community. KWAHO project activities were mainly undertaken in rural areas but the organization also had intervention programs in peri-urban slum villages within the main towns of the country. The Kochogo/Kakola Community Water and Sanitation Project in Kisumu District of Western Kenya represented an ongoing successful women initiated and managed water and sanitation program. The project is located in a flood-prone area, and its ability to manage environmental problems that go with such conditions marked one of its singular contributions to the health and wellbeing of women and children in the community.

Some of the problems addressed by KWAHO in the Kochogo/Kakola Community Water and Sanitation Project included the frequent floods causing serious epidemics such as cholera and diarrheal diseases, poor infrastructure, few schools both at the primary and secondary levels, environmental sanitation and lack of proper sanitary facilities, low socioeconomic status of the

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<sup>9</sup> Mwangola, M. (1993). "Ensuring Access to Clean Water for Women and Children in Rural Kenya" in Steady, F.C. (ed.). *Women and Children First: Environment, Poverty and Sustainable Development*. Rochester, Vermont: Schenkman Books, pp. 402-419.

community, and the pollution of water sources from sugarcane factories' effluents, agrochemical practices, and human waste disposals.

The project began with several objectives. It aimed to mobilize and supplement local resources, both human and material, in order to provide safe drinking water through tube wells to assist in reducing water-borne diseases among the entire population of the area. Resource mobilization was also geared towards instituting health education, particularly environmental health, in order to reduce both the causes and levels of maternal and child malnutrition. The project intended to strengthen the capacity of local communities through training of the local community in leadership roles, organization and management, and hygiene and sanitation. Additionally, there was the objective of supporting and strengthening viable income-generating activities, especially run by women in the area, in order to improve the economic capacity of the community.

Several women's groups actively participated in the project concerns within the community. Community participation was the key word and KWAHO utilized women-group leadership to train them in basic issues of hand-rig operation, construction and equipping the wells with hand pumps. The community was also involved in selecting sites for the wells. Thus, the people identified themselves with the project and in the choice of technology to be used, and were committed to maintaining their water systems. The project demonstrated that no matter what the background, communities in Kenya require basic training in basic leadership and management skills, operation and maintenance, and health education.

The achievements of the project were diverse. Several water points were developed with some situated at primary schools. These facilities serve about 80% of the targeted population and were primarily run by women groups. Environmental sanitation improved greatly through the establishment of improved pit latrines, childcare programs and health education through community education seminars and workshops. Income-generating activities were initiated and had the effect of improving the standard of living in the area. Women groups became actively engaged in handicrafts, fish keeping, vegetable growing, tree nurseries, poultry keeping and zero grazing of cattle. They sell the products to generate money. Training and health education workshops equipped local women with basic skills in leadership, management, and the operation and maintenance of wells. The project was also active in combating rural deforestation and women were actively involved in developing tree nurseries.

Women's participation in the decision-making, implementation and management of the project operations was very high. It was women who identified and initiated the entire process. The emergence of group activities, especially those regarding the concern for the degradation of the environment, were all the function of women's initiatives. KWAHO recognized that intensive training of selected women leaders for a community project is an excellent tactic for diffusion purposes. Skill transfer and adoption of appropriate technologies is easily achieved where women are involved on a widespread scale and in Kochogo/Kakola, women form the core of the diffusion scenario.

The project had a tremendous impact on the community, economy and environment. The success of the project was partly dependent upon the high degree of community participation in

the conception, planning, implementation and decision-making at all stages. Women were involved in executing what they had conceived, thus creating a sense of satisfaction, ownership and strong identification with the project. The project demonstrated that proper leadership and a well-organized community can manage project affairs on their own, a sign of long-term sustainability of the project's operations and maintenance. When rural women are given ample time, they are innovative, care much about their environment, and think of the socioeconomic status of their communities. The project represents a successful women-initiated, developed and managed rural development project within the KWAHO operational context. This has had a profound impact both on the physical environment of the area, as well as on the development of new social relations that have emerged as a result of the empowerment of women through the project process.

## Chapter Six: Conclusion

Over most of Sub-Saharan Africa and Latin America, the amount of development that can take place is largely dictated by availability of natural resources. The effective utilization of natural resources, therefore, becomes a crucial factor not only in the success of various development projects but also in issues of sustainability. The case for women's involvement to be both appreciated and enhanced has been made at various points throughout the thesis. Geography (location), culture, class, political and social structures, including specific gender relations, all exert some force in shaping and defining the emergent patterns in environmental resource management and sustainable development. In this regard, the postmodern tendency to deconstruct and de-universalize is certainly appropriate.

Having presented the various case studies and theoretical perspectives, the purpose of this conclusion is to highlight the various constraints on women's effectiveness in natural resource management. In addition, some strategies will be offered, from a feminist perspective, which could be effected to remedy various situations.

### *Constraints to Women's Effectiveness in Natural Resource Management*

In many areas, traditional practices and customs have effectively hindered rural women's productive roles and capacities. This is also associated to the gender division of labor, which in many societies structures work allocation such that women end up being both overburdened and overworked. In some cases, socio-cultural practices are enforced by law or religion, which serve to further constrain women in their productive roles. Because customary law sometimes forms the basis of institutionalized laws in developing countries, it becomes difficult to undertake any meaningful law reforms with regards to gender issues.

The strong presence of patriarchal systems acts as an impediment to women's full participation in development projects. Lack of support from local authorities and institutions, whether financial, agricultural, legal or educational, means that the needs of women are often very poorly represented or overlooked. Further, women are poorly represented in local organizations. They are minimally involved in community leadership. Men continue to dominate in decision-making and leadership circles. Political and bureaucratic factors also exert a strong influence in determining women's access to natural resources, such as land and water. In the long run, this constrains women's productivity.

The invisibility of women's roles and activities in environmental resource management efforts is a factor that continues to impede their increased productivity in sustainable development activities. Women's work in the environment as well as in development projects is not given full recognition. Nor is it accorded an economic value. Well-exemplified by the case studies, is the multi-dimensional nature of women's work as producers. The majority of rural women spend as many as fifteen hours each day in productive roles. Although there has been a significant amount of scholarship and publicity focusing on women's role in sustainable development, a large portion of their experiences and activities are as yet undocumented or unnoticed. The invisibility of women is a critical factor that needs to be addressed in policy-making spheres because before their role as environmental resource managers can be enhanced,

it must first be recognized. Making the “invisible” visible, therefore becomes the key challenge. Østergaard (1992) asserts that there is a large discrepancy between the amount of women’s work reported from micro-studies and case studies, and that recorded in employment and agriculture macro-statistics.

Lack of educational facilities for women has acted to bind them further into traditional, time-consuming, overburdening, and less productive modes of production. While I am by no means arguing that the methods which women predominantly use are non-productive, it is clear that their capacity as producers could be greatly enhanced if they received appropriate training in various sectors. We need to bear in mind that several of women’s traditional agricultural techniques are useful in matters of environmental conservation. Some of the case studies illustrated what can be achieved when women are targeted for training in sustainable development activities and projects. Technical advice is hardly made available to women although they continue to undertake some of the more arduous and time-consuming tasks. In many cases, the introduction of technology reflects a bias against women. Extension services are also highly discriminatory in their attitude towards women, especially in the agricultural sector. Most extension workers are men and tend to concentrate on male farmers or heads of household while ignoring women farmers.

Legal, socio-cultural, political and financial factors all exert some influence in greatly diminishing women’s access to resources. Women are greatly disadvantaged by inheritance laws. Lack of access to resources means that women are limited in the scope of independent activities that they may wish to engage in. Their agency is thus severely limited. It would be incorrect, however, to assume or infer that resources are readily available to the greater majority of men in any locality. Obviously, some men will always have more access to resources than others. Nonetheless, the factors that mitigate against women acquiring resources are certainly more influential than is the case for males. The distribution and allocation of resources continues to be a factor that is yet to be effectively addressed in efforts to integrate women more fully into sustainable development initiatives. Lack of capital as well as credit facilities hinder women from purchasing modern tools, farm equipment and agricultural supplies.

### *Policy Recommendations*

It should be noted that there can be no “blanket” actions or strategies that can effectively be applied to enhance women’s role as active agents in environmental resource management and sustainable development. Some specific actions and recommendations would, of course, be more suited to particular contexts while they may very well be less effective in a different case. It was clearly pointed out in the discussion on postmodernism that we cannot universalize the category of “women.” We cannot expect that women’s perceptions, knowledge and strategies in natural resource management are identical in all regions. Nonetheless, from a feminist perspective, there are a number of strategies that could be applied.

Gender-sensitive project formulation should be a concern in development projects. There are numerous projects going on in developing countries where sustainable development is a priority. As the case studies illustrated, many of these projects are located in the rural areas where women are the primary community participants. Many males have migrated to the urban centers in



search of wage-labor or are more heavily involved in plantation or commercial agriculture. Project design and implementation needs to be conducted bearing in mind that women constitute the majority of participants in sustainable development initiatives. Their input must, therefore, be both recognized and enhanced. In this regard, gender issues should be given a careful analysis.

Women need to be more involved in decision-making, project design and implementation of environmental policies. This is especially crucial because women are the primary actors in agriculture, water supply and sanitation, forest management, fishing and health, all of which are key sectors in the socioeconomic development. Involving women in policy-making would, therefore, necessitate their greater political participation and representation in the legislature. It becomes necessary, then, to undertake outreach activities with the goal of educating women about various democratic processes.

At local, national and international levels, the situations, needs and roles of women, needs to be urgently addressed. Awareness and advocacy can be undertaken both by local women as well as other groups. The case studies clearly illustrated how effective group organizing for sustainable development is. Awareness and advocacy needs to be an ongoing endeavor. The plight of women must be steered to the forefront of national development planning agendas.

Education and training sessions need to target women more aggressively. While it has been noted that time constraints appear to be a universal factor for most women, it is important that they undergo training sessions as this would greatly enhance their time management. Education and training can be conducted in small informal groups with women being encouraged to assume leadership roles. This would have the effect of bolstering their self-esteem and confidence and encourage them to participate more actively in wider community events. Education also has the effect of making women aware of their political and legal rights. Development agencies need to specifically incorporate and implement a gender training aspect in their activities. Ultimately, this would encourage them to participate in decision-making and leadership roles, a factor that would positively influence their quest for increased rights to resources.

Economic opportunities available for women need to be increased. Constraints that hinder women from fully accessing economic facilities should be addressed. Local cooperatives and agricultural financing institutions need to be encouraged to co-opt women into their clientele base. Once women have greater access to capital and credit facilities, they would be able to purchase, with greater ease, the necessary farm supplies and equipment that would greatly facilitate their role as producers. This is particularly crucial in the agricultural sector where the majority of women are engaged in food production. In addition to access to capital and credit, particularly within the agricultural sector, women's access to markets should be improved. Difficulties in transportation should be addressed so that women experience less difficulties in getting their produce to markets.

Clearly, lack of access to land continues to be a huge obstacle to women's role as producers in developing countries. Although reforms in land tenure have been instituted in several countries, women still continue to be overwhelmingly disadvantaged in matters of land ownership. If women have greater access to land, not only would this encourage them to be

more productive in their role as producers, but it would also enhance their creativity and resourcefulness because they would experience a greater sense of agency in determining their priorities and directing their actions in matters of environmental management and sustainable development.

The fact that women are often rendered invisible in sustainable development circles tends to overlook not only their actual role but the potential they have. Women's indigenous skills, knowledge and insights should be welcomed in development planning and sustainable development efforts. This is a crucial factor in empowering women because their resourcefulness would be recognized and ultimately, their productivity would be heightened.

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