

**- AGROFORESTRY -  
A GENDER AND ENVIRONMENT ANALYSIS:**

**A CASE STUDY OF THE CARE-SIAYA (KENYA)  
AGROFORESTRY EXTENSION PROGRAMME**

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Recent discussions of environment and development suggest that gender is a central factor in both the degradation of the natural environment and the potential for sustainable development that will ameliorate and prevent further environmental decline. Pursuing the relationships between gender, environment and development, this paper formulates a gender and environment analysis and applies it to an examination of an agroforestry development project in Siaya District, Western Kenya. The basic premise of agroforestry is that agricultural and forestry production in addition to environmental protection can be achieved within the same land use system. Few studies however, have adequately examined both the conceptual and practical relationships between gender, development and agroforestry. This paper asserts that in Siaya District, Kenya, gender relations shape the practice and potential of agroforestry as a sustainable land use system and conversely, the practice of agroforestry influences gender relations at various levels of society. At the widest level of society, statutory and customary land and tree tenure play a fundamental role in gender and agroforestry. Within the household, gender shapes the relationships between labour allocation, decision-making and control of agroforestry benefits. Gender relations also influence individual men's and women's environmental perceptions, emotions and experience which in turn, mould the practice of agroforestry and the nature of rural development in Siaya District.

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## CHAPTER ONE

## INTRODUCTION AND THEORETICAL FRAMEWORK

In its conventional definition, agroforestry is "...a collective word for all land-use practices and systems in which woody perennials are deliberately grown on the same land management unit as annual crops and/or animals" (Gholz, 1987:1; Lundgren, 1982). Only the term "agroforestry" is new, for in both tropical and temperate environments, the concept of combining trees with crops and/or livestock is as old as the techniques of crop rotation, intercropping, farm orchards and woodlots. In Western nations, such as Canada, agroforestry has declined with the general demise of small-scale, mixed farming; only recently has it regained the attention of national research and policy.<sup>1</sup>

As a field of inquiry, most agroforestry research and policy is directed to the Third World. Since the 1970s, the revival of agroforestry by international development agencies and advocates has been inspired by the virtual failure of agricultural and forestry monocultures, problems with the management of government-owned forest reserves and the intensification of land degradation. These environmental and development disasters have reinforced the persistent and profound poverty facing the vast majority of rural people in the Third World.

It seems ironic that while agroforestry is identified as a solution to the environment/development crisis, in its conventional implementation this land use practice has tended to remain within the production and profit-oriented paradigm which has actually characterized the vast majority of international "maldevelopment" to date (Shiva, 1989; Taylor and MacKenzie, 1992). However, as Martinez Alier (1989) suggests, it is not a foregone conclusion that this economic approach will remain unchanged in the future. Nonetheless, present research efforts must begin to more critically question the conceptualization of the key elements of agroforestry -- land, trees, crops and animals -- as "resources," evaluated by the standards of Western technology and commercial value.

This paper submits that by concentrating consciously or unconsciously on the technical and commercial dimensions of agroforestry, mainstream development has tended to underestimate the human factor in agroforestry and limit the potential of agroforestry as a solution to environmental degradation and impoverishment. The study and practice of agroforestry requires an alternative approach whereby the tangible components of agroforestry (for example, land, trees, crops and animals) are conceptualized within the holistic meaning of the environment. In this sense "environment" encompasses social, cultural, political, economic and physical elements but it also identifies and analyzes the influence of human perceptions, emotion and

experience which, although they are abstract notions, directly or indirectly determine the spatial and temporal arrangement of trees, crops and livestock in agroforestry.

An environmental approach to agroforestry is also appropriate because human relationships vis-à-vis land, trees, crops and animals are complex as well as time -- and site -- specific. This realization complements the trend in development to question, if not reject, universal generalizations (Taylor and MacKenzie, 1992). It also recognizes that although collaboration between "hard" and "soft" science is often more rhetoric than reality such co-operation is essential for the prevention and amelioration of degraded and impoverished environments.

In recent years, many academic and practical studies, not the least of which are from Third World scholars, have made significant contributions to a more comprehensive understanding of international environmental issues. Studies such as Shiva (1989), Barraclough and Ghimire (1990) and Agarwal (1992) have emphasized how environmental degradation in developing areas is a historical phenomena, socially produced and reproduced by relations which are shaped by factors such as gender, class, race, ethnicity and age.<sup>2</sup> Feminist research has made a particularly strong contribution to development studies by substantiating that gender is a key organizing principle in society. Whereas sex is biological, gender refers to the

sociocultural and psychological meanings attached to being male or female (Segall et al, 1990). Because gender is a sociocultural phenomenon it cross-cuts and interacts with other social identities such as age, class, race and ethnicity (Boulding, 1988).

As Young (1988b) has discussed, gender relations like other social relationships are not equitable but structured in power -- in such a way that society will tend to favour or discriminate certain individuals or groups of people. These power relations have many practical repercussions. For instance, as Arizpe (1982) and Mies, Bennholdt-Thomsen and von Werlhof (1988) have demonstrated, the actual structuring of discrimination can be detected at different but interrelated levels of society (for example, the household, economy and international market).<sup>3</sup> In the course of this analysis I have referred to this level of power relations as "external" because they exist around and sometimes, beyond an individual's control. I also recognize that power relations can be internalized by an individual. These "internal" power relations are manifested by personal perceptions, emotions or knowledge.

Taylor and MacKenzie (1992) have explained that the process of challenging and changing power structures is encapsulated by the term "empowerment." Ultimately, this study is interested in understanding whether a promising land use system such as



agroforestry could be a mechanism of empowerment, particularly for marginal groups of people such as women, and not merely a way of arranging trees, crops and animals on a landscape.

I assert that a focus on gender relations is especially relevant to an examination of agroforestry because gender-based power relationships such as household allocation of labour, decision-making and control of benefits, land and tree tenure and farmers' knowledge and perceptions all interact to determine the nature and extent of both individual and group participation in agroforestry. In the absence of a critical understanding and application of gender relations in agroforestry, the potential for agroforestry to contribute to rural development will be limited.

A study on gender relations and agroforestry is also germane to the widening arena of debate associated with the theme of women and gender in the development process (Plewes and Stuart, 1991). With the notable exceptions of Kettel (1991a, 1991b), Agarwal (1992) analysis of the interaction between gender relations, environment and development issues has not been achieved. Furthermore, few of the existing references have applied a gender and environment framework to an existing natural resource management/development project. Another key objective of this examination of gender and agroforestry is therefore to highlight

the conceptual and practical interface between gender and environment issues.

As a result, three main questions propelled this study. What is the correlation between the two themes of gender and environment in development studies? How can a study of agroforestry both gain and contribute to an understanding of gender and environment and the design of gender and environment analysis? Using such an analysis, how do gender relations shape the practice of agroforestry; and conversely, how does agroforestry affect gender relations?

An investigation of these questions required three things: first, a brief review of the themes of women, gender, environment and development and second, a conceptual approach that facilitates the description and explanation of gender relations in agroforestry. The rest of Chapter 1 provides a brief background to these overlapping themes and theoretical considerations behind what I refer to as Gender and Environment analysis. This analysis then serves as a lens through which a subsequent discussion of gender relations and agroforestry can be viewed.

Third, a site-specific examination of the practice of agroforestry was essential to an understanding of how the theory of gender relations and agroforestry is translated into practice and challenged by real-life circumstances. I decided to base

this study in Kenya because of the significant in-country reference material and activities on the two themes of gender issues and agroforestry. As well, I had previously done some work on agroforestry extension in Kenya (Hambly, 1989).

Fieldwork for this research paper was conducted in Siaya District, in Nyanza Province, based on the experience of farmers involved in the Agroforestry Extension Project (AEP) of CARE-Kenya. The AEP, which began in 1984, is the longest-operating and most extension-intensive agroforestry development project in Sub-Saharan Africa. As a Canadian, I was also interested in this site because the project has been financially supported by CARE-Canada and is one of the Canadian International Development Agency's (CIDA's) premier environment and development projects. Details of the AEP programme and the research methods used in this study are covered in Chapter 2.

A Gender and Environment analysis of agroforestry interprets the contemporary intersection of gender relations and agroforestry as a historical phenomenon. However, studying how the past has shaped the present land use in the region means relying on a frequently biased and fragmented historical record. Thus, a crucial component of a gender and agroforestry agenda is to recover and reassess its historical background. Chapter 3 is directed to these purposes.

A discussion of results from an examination of gender relations and agroforestry in the CARE-Siaya Agroforestry Extension Project (AEP) is covered in Chapters 4 to 6. Chapters 4 and 5 address the definition and impact of what I refer to as "external" or exogenous power relations in agroforestry. These issues involve relationships that exist in Luo and Kenyan society as a whole and more specifically, within households in Siaya District. To illustrate the broad social structures affecting gender relations and agroforestry I examine the impact of the state and Luo customary land and tree tenure in Chapter 4. In Chapter 5, I concentrate on the interrelated components of household level gender-based labour allocation and decision-making in agroforestry.

Apart from the "external" power relations that influence gender and agroforestry, an environmental approach requires the identification and understanding of what I refer to as "internal" or endogenous power relations. In this case, I consider gender-based perceptions, emotions and experience in agroforestry which are internalized by individual men and women but produced and reproduced through individual and group interaction with the environment. In Chapter 6, I discuss the importance and impact of internal power relations and compare them to a key concept of environmental studies -- the notion of the environment as a "sense of place."

The final chapter of this research paper summarizes the study and recommends future directions in gender and agroforestry issues -- specific to the CARE-Siaya Agroforestry Extension Project and more generally, to this field of study.

### **Gender, Development and the Environment**

Over the past two decades, gender analysis and the environment have emerged as two major themes in international development. However, the simultaneous existence of these two themes has not always guaranteed their mutual integration and correlation.

By 1972, in the shadow of global environmental disasters and neo-Malthusian predictions of population change, the state of the environment in the Third World was a key issue of debate in the influential United Nations Conference on the Human Environment (Caldwell, 1990). Prior to this world congress, most environmental action was welfare-oriented, involving short-term relief for areas affected by such "natural" disasters as drought, flooding or landslides. On one hand, environmental disasters tended to be seen as uncontrollable, unexplainable "acts of God" and on the other hand, such disasters fuelled the prophecies of the economists and "doomsday advocates" who in the imagery of the American space program, argued for greater human control over the

environment for the future of "Spaceship Earth" (see for example, Boulding, 1966).

These interpretations of the environment vis-à-vis development possessed strong elements of Western ethnocentrism and reductionism -- especially in the sense that development in the Third World represented a demographic crisis rather than a socio-economic and political crisis of international proportions. Inevitably, the prescribed welfare-oriented programs typical of this era, such as food and medical relief or family planning projects were unable to tackle the underlying causes and conflicts inherent in environmental degradation in many Third World countries. Most importantly, there was no profound recognition of the differential impact of the symptoms, let alone the causes, of environmental degradation and development programs on women and men in the Third World.

In the late 1960s and early 1970s, major development agencies, led by the World Bank, reoriented their development policies in Africa away from urban-based industrialization to a rural focus on technology-intensive agriculture (Freund, 1984). Despite the reorientation from urban to a rural environment, this policy shift maintained strong undertones of the logic of "frontier economics," an approach which equated development to increased economic production and interpreted the environment as a source of raw materials for this growth as well as a sink for its waste

products (Colby, 1989). In addition, this approach confined its attention to the physical environment while ignoring the social, cultural and political factors which interact to define the environment. As the work of Jiggins (1986), Stamp (1989) and Sen and Grown (1989) have demonstrated, despite the crucial role of Third World women in virtually all forms of environmental management, unbridled faith in the environment as both a source of raw materials and a sink for technological waste has had its most detrimental impact on the lives of the poor women and their dependent families.

It is often the work of Boserup (1970) which is regarded as a historical turning-point in the study of women and development, although women of the Third World have been involved in social struggles for centuries (Mies, 1986). I argue that prior to the 1970s, development issues affecting women were analogous to those of the "environment," because efforts to improve women's lives were also narrowly viewed by development planners in terms of social welfare. As Moser and Levy (1986) have pointed out, the majority of development policy and prescriptions interpreted "women's projects" as synonymous with nutrition, health and family planning. Although, these projects addressed the symptoms of issues such as poor nutrition or maternal health they ignored the fundamental social, economic and political basis of why such problems originated and persisted. The "real" development activities such as agricultural training or income generation

were focused on men who, as "heads of the household", would supposedly distribute the benefits of development equally within the home (Clark, 1984; Harris, 1984). This ethnocentric view of undifferentiated household membership and assumed complementarity, as well as the general failure of the "trickle-down" of modernization approaches to development, were among the key issues exposed by feminist scholars such as Youssef and Hetler (1982) and Buvinic (1983).

By the mid-1970s, the institutionalization of women in development (WID), led primarily by Western and Third World women working in development agencies such as the United Nations, resulted in a policy reorientation which encompassed WID principles and created WID advisors and programs in most major development agencies (Maguire, 1984; Plewes and Stuart, 1991). By the start of the International Women's Decade in 1976, however, it was apparent that different directions in the debate of women vis-à-vis "development" were evolving (Rathgeber, 1990). Specifically, the term "WID" became associated with the conceptual framework adopted by major donor agencies such as the World Bank, USAID and CIDA (Plewes and Stuart, 1991). In general, this approach focused on the identification and integration of women's productive roles into the development (read modernization) process. As Maguire (1984) stresses, WID theorists found that they needed women in "development" in order to make both development and women more "efficient." In order to



achieve these objectives, mainstream development emphasized the quantification and maximization of women's productive roles while the process of "development" into which women were being "integrated" remained fundamentally unchanged (Moser, 1986).

Concurrent to WID, there was a growing awareness of how women had been neglected as a socio-economic group across the full political spectrum of development theory and planning (Jacquette, 1982). Women make up at least half of the population in the Third World and contribute two-thirds of the total hours worked, but on average, earn one-fifth of men's income and own 1% of total assets (Patel, 1990). That such inequalities are not only characteristic of women's relations with men, but also, their disadvantaged position in a Western-dominated, profit-oriented development process, is the key point of departure for advocates of "women and development" (WAD) (Rathgeber, 1990). In Rathgeber's classification of gender-based approaches in development, she indicates that proponents of WAD emphasize the process by which development is achieved. However, WID and WAD share a common "development" goal: monetarily defined growth. By concentrating on women's production, WID and WAD policies secure women more tightly in a process of development associated with capital accumulation or the pursuit of economic profits, the extension of the market and the sexual division of labour (Beneria and Sen, 1982).

Like WID, WAD is preoccupied with the productive roles that can add to women's already excessive work burden and undermine their reproductive responsibilities (Maguire, 1984). Reproduction refers not only to the biological reproduction of children but all aspects of the maintenance and succession of the immediate and extended family. Thus, women's work subsidizes an existing and future labour force and ensures the continuity of essential knowledge and cultural identity (Mies, 1988; Young, 1988).

It is important to point out that linkages between WID or WAD and environmental issues have tended to focus on sectoral, resource-based approaches to subjects such as "women and agriculture," "women and forestry," etc.<sup>4</sup> Although many of these studies have contributed solid information on women's role in various sectors of the physical environment, they have generally lacked a broader interpretation of both women -- as well as -- the environment. This is partly due to the emphasis on women's "productive roles" in both WID and WAD, which narrow the scope of women's actual knowledge and interaction with the environment. As well, by exclusively concentrating on a productive world view, both WID and WAD approaches fail to challenge the pervasive view that the environment is fundamentally "a pool of resources." Consequently, I argue that most analyses which use the term and concept of "women and the environment" tend to succumb to a common argument and policy prescription -- that in order for development to occur both women and the environment must be

managed "efficiently" (see, for example, Dankelman and Davison, 1988; Collins, 1992).

For this same reason, I believe that neither WID nor WAD approaches have adequately formulated a significant response to the recent discourse on "sustainable development." In other words, both WID and WAD operate within the same productive paradigm which has historically characterized most mainstream development including the approach of sustainable development coined by the Brundtland Commission in the 1987 report Our Common Future. Only recently, in fact have scholars such as Kettel (1991) begun to analyze the implications of sustainable development policy on Third World women. Yet even in the work of Kettel (1991) and Collins (1992) their analyses lack the necessary critical review of the extensive and highly variable literature on sustainable development.

In the coming years, I hope that such critical analysis will increase partly in response to the lack of representation which women's concerns received during the recent 1992 United Nations Conference on Environment and Development in Rio de Janeiro but more importantly, in reaction to the "policy fallout" from Rio -- particularly, the institutionalization of sustainable development. For example, what will be the implications for women throughout the world if women continue to be compartmentalized in sustainable development activities as a

"major group" (along with youth, NGOs, trades unions etc.) when in fact, they represent at least half the world's population? Will it also mean that multi-donor including World Bank programs will continue to allocate only 1% of their budgets (\$300 million) to women, even when women play an integral role in the key aspects of environment and development such as agriculture, forestry, food security, water and sanitation? This is the real challenge which must be met by researchers and development institutions alike.

I believe that a significant challenge to the field of sustainable development and the field of women, environment and development is offered by a re-appraisal of a third and alternative approach to conceptualizing women vis-à-vis the development process referred to as Gender and Development (GAD). While this analysis is rooted in the early work of feminist scholars such as Whitehead (1979) and Young (1988a, 1988b) at the University of Sussex, it has been expanded by considerations raised by a wide range of development theorists including political economists (for example, Stamp, 1989) and rural development (for example, Poats, Schminck and Spring, 1988; Feldstein and Poats, 1989). Development agencies and practitioners have also contributed to the GAD literature (for example, Rathgeber, 1990; CCIC, 1991).

As I discuss below, there are some similarities or important distinctions in the range of literature which has contributed to GAD analysis. While fundamental premises can be highlighted, a single "GAD approach" is unlikely not only from a theoretical standpoint but more importantly, from a review of practical approaches to GAD. This latter point is very important because a number of development agencies have adopted the terminology of "gender," "GAD" or "empowerment," while the full conceptual framework on which they are based is used selectively or abandoned completely.<sup>5</sup> In some development agencies, it is apparent that WID departments or projects have simply slipped the "gender" label onto their training and project proposals.<sup>6</sup> It remains to be seen whether this change in titles will actually reflect and achieve the essence of a GAD approach -- the empowerment of women and the most marginal people in developing countries through transformation in structures and attitudes of gender inequality and social discrimination.

A similar concern has already been articulated by observers such as Honor Ford-Smith (1990:3) who has asked, "how will women know that the neutral category of gender will operate to empower them?" Undoubtedly, as an analytical tool that involves both men and women, the concept of gender can be manipulated so that it is more acceptable to bureaucrats who were uncomfortable with a "women's focus" on development issues.<sup>7</sup> Likewise, Bratton (1990:95) argues that "empowerment" risks political repression

and therefore, what is needed is "voice" which poses less of a threat to power structures. In many ways, the most influential terms and concepts in international development run the greatest risk of being co-opted or abandoned precisely because they pose a serious threat to mainstream development theory and practice. Undoubtedly, the challenge for proponents of gender and development is to "de-neutralize" the image of gender and to prevent or expose the manipulation or co-option of terms such as gender or empowerment. Most importantly, emphasis must be placed not on individual terms but on their underlying ideas, application and results.

**Key Aspects of Gender and Development Analysis:** Contributions from such scholars as Whitehead (1979), Rocheleau (1989) and Rathgeber (1990), have rejected the belief that women, are the "problem" or "solution" to development. Likewise, GAD does not assume that all men are "wrong" and all women are "right" but rather, in general, that men are more privileged than women. As Young (1988b) has stressed, unless men are challenged and made aware of deep-rooted, socially produced and reproduced inequalities, they will not willingly make significant changes to reduce discrimination and improve women's position in society. These premises underscore the use of the term "gender" rather than "women" in GAD analysis which recognizes that the roles and the relations of both men and women are central issues to the

development process and cannot be interpreted in isolation of one another (Young, 1988b).

As Young (1988b) elaborates, inherent in the meaning of gender are the socially and culturally elaborated power relations between women and men. Central to Young's (1988b) interpretation of GAD is a further recognition that while women's repression is widespread it cannot be assumed that all women are historically subordinate to men or experience repression in the same extent and manner. This realization is based on the premise that women of different race, class, ethnic or religious affiliation have key differences. Women's lives are also shaped in varying degrees by their multiple and ever-changing social roles as mothers, wives, daughters, in-laws, sisters etc. (Young, 1988b). Therefore, women do not live in a social vacuum and their past, present and future lives must be seen in relation to each other and to men.

Many critiques of male-dominated development such as Okeyo (1980) and Molyneux (1985) have focused on the tendency of development to focus on women's conditions of poverty and neglect their position in society. Young (1988b) has defined women's condition as a material state which they experience day to day while their position is more strategic in nature and interpreted relative to men's social, economic and political standing. This division of conditions/position leads to a similar distinction between

immediate and strategic needs (Young, 1988b). The practical direction suggested by this GAD theory is that development must focus on meeting both women's immediate and strategic needs in order to improve women's conditions and position in society, the economy and politics (CCIC, 1991; Moffat, 1992).

By drawing attention to women's and men's relative condition and position, the rationalization that relations between women and men are "private" or "a family matter" has been rejected (Ortner and Whitehead, 1981; Young, 1988b). Society and culture have worked to shape the behaviours that characterize both private and public roles and relations between the sexes and therefore, gender relations within and outside the household are interrelated (Tiano, 1984; Mies, 1988). This realization can be applied in GAD analysis by understanding both women's productive and reproductive roles and the "fit" between these two spheres (Young, 1988b).

The contributions of scholars such as Mies (1988) has led to a further awareness that the subjugation of women, at all levels of society, and the failure of development to benefit women would not exist without male domination both in society and throughout a process of development that has been narrowly based on capital accumulation. Therefore, as Rathgeber (1990) has argued, GAD analyses must consider not only the relevance of gender roles and



relations in development but also the nature of the development process itself.

As Plewes and Stuart (1990) have supported, the practical implications of a comprehensive (not a selective) GAD approach rest on the realization that because structures of gender inequality are not biologically but socially created, they can change. For this reason, I believe GAD presents a formidable challenge to mainstream development policy and action because it cannot simply be injected into a project that will remain fundamentally the same. As Rathgeber (1990) has argued, the necessary structural change required by GAD in the both the conceptualization and practice of "development" makes it a significant and perhaps unacceptable challenge to externally-driven, mainstream development.

The process by which power-based social structures are challenged is incorporated by the term "empowerment" (Taylor and MacKenzie, 1992). As Young (1988a) points out, empowerment is a key objective of GAD. Young (1988b) defines empowerment as individuals and groups defining and promoting their own objectives; as such, empowerment involves not only structural transformation but attitudinal change. As the GAD training manual written by the Canadian Council for International Co-operation (1991) supports, women's empowerment must be multi-dimensional involving not only women and men in developing

countries but a re-examination of gender issues within donor and development agencies in the South as well as in the North. In the GAD literature, the options and processes of encouraging such change are not well documented.<sup>8</sup> This realization presents a significant challenge to future work in the area of gender and development. By considering and applying the relevance of gender relations to environmental issues and specifically agroforestry, I have attempted to meet this important challenge. I now turn to a discussion of the analysis of Gender and Environment used in this study.

### **Gender and Environment Analysis**

The linkage between gender issues in development and the environment is neither a timely coincidence nor a collision of two popularized development themes but a correlation of two distinct global phenomena. As the studies of Shiva (1989), Kettel (1990; 1991a), Rocheleau (1991); Leach (1991); Whitehead (1991) and Agarwal (1992) have shown, gender-based inequalities created and reinforced by the mainstream development process are inextricably linked to the persistence and intensification of environmental degradation.

Yet, in this case study of agroforestry, it was apparent that gender and environment analysis could not simply be an extrapolation of GAD into environmental issues because of the

incongruencies of the subject areas from which it has evolved -- namely Gender and Development (GAD) and contributions from the fields of environment and natural resource management. In this sense, it was necessary to examine not only the individual points of theory and practice which contribute to Gender and Environment but perhaps, more importantly, the interface between these main components. As a result, five key considerations in Gender and Environment analysis were identified and developed through this study on gender and agroforestry:

- a re-examination of the terminology and its assumptions in gender, development and environment issues;
- the inherent diversity of gender relations and environment issues;
- the influence and interpretation of history;
- a reassessment of the dichotomy of condition/position and immediate/strategic needs used in GAD analysis and applied to environmental issues;
- the existence and importance of external and internal power relations in gender and environment issues;

Terminology and Assumptions: Language analysis can play a key role in understanding social relationships including the relationship between men, women and the environment. In her study on language, gender and the law in Kenya, Omondi (1989) has accurately shown that analysis of the language and terminology is central to an understanding of gender inequality in customary and statutory law. Adopting Omondi's (1989) approach, I argue that language analysis is also relevant to gender, development and environmental issues because this exploration of the meaning, evolution and use of words in both English and the local language (in this case Dholuo) illuminates information or assumptions which contribute to an understanding of these issues.

For example, mainstream development theorists and practitioners often use the term "environment" without acknowledging its origin or meaning. There is also a tendency to interchangeably use the concepts of "natural resource management" and "environment" without identifying the assumptions that are implied by the term "management." As I have pointed out before, in mainstream development theory and policy, "natural resource management" tends to support that the most important resources are those which are economically valued and accordingly, require more efficient management. This "efficiency" argument in resource management often corresponds to the notion of the "conservation" of natural resources. As Okidi (1990) suggests, conservation has tended to import foreign values and superficial environmental

strategies into Third World countries. Through the commoditization of natural resources such as wild animals, rainforests or spectacular vistas, the ultimate benefits of conservation accrue to unaccountable governments, foreign tourists or multinational business and not to the local inhabitants whose livelihoods may depend entirely on their access and control over such resources (Sen and Grown, 1989; Stamp, 1989; Shiva, 1989).

Furthermore, as Kennedy (n.d.:1) has pointed out, "natural resource management in North America and the western world has been a male profession dominated by traditional masculine gender attitudes, assumptions and role models." In forestry, this institutionalized male-orientation is most apparent in the discipline's dominant terminology and conceptual frameworks (Kennedy, n.d.). Terms such as timber management are characterized by masculine images of "hard science" while other tree-based systems such as landscape forestry or community forestry are inherently "soft science" and therefore, more "feminine" or "emotional" in character (Merchant, 1979; Kennedy, n.d.). In light of my own experience in the field of community forestry and work by researchers such as Shiva (1989), I would argue that in the course of donor-driven policy development and planning, sexist environmental attitudes, perceptions and terminology may be transferred to the Third World, regardless of whether or not similar bias existed in these countries prior to a

particular policy or project or earlier infiltration of western culture. These assumptions and biases reinforce what Stamp (1989:30) has referred to as the "boundary problem" in development:

"...the analysis of gender is either ghettoized or not integrated into technical subjects...this is probably the most serious problem facing both further fruitful research on development and the generation of adequate development policy." (Stamp, 1989:30)

Dissecting the language and the ideas used to describe and explain environmental issues is central to a Gender and Environment approach in order to overcome the "boundary problem" between social and technical research on development theory, policy and action. In other words, by examining the meaning and assumptions behind certain terminology from both the social and technical sciences, I believe a greater awareness is created about the opportunities and restrictions facing each science and collaboration between them.

Aside from employing this method in a more theoretical sense, I found that language analysis could also be used as a practical technique of research and extension for Gender and Environment issues. Language analysis provided an opportunity to create a dialogue between local people and outsiders about gender and environment issues and it also contributed positively to the gender/environment training of intermediaries such as research assistants and extension workers. For example, in different cultural contexts and languages, it is possible that the terms

and concepts behind "environment" as well as "gender" have no simple or similar translation. Language analysis can therefore provide an entry point into a discussion of these issues. In the course of this study, I asked research assistants and extension workers to identify the meaning of the words "environment," "agroforestry" and "gender" among the local people -- the Luo of Siaya District. We found at least seven different words or phrases which could be used to connote the idea of "environment" and each term could be further classified by gender and age of the user, context of conversation and geographic area. Likewise, as discussions with farmers revealed, the concept of agroforestry had numerous expressions in the local dialect depending on various social relations as well as the specific area of land under consideration and socio-cultural or economic value of the trees and species referred to. As well, the notion of gender and key words in English such as "rights" and "awareness-building" required complex translation which often replaced a single word in English with a phrase or anecdote in Dholuo.

**Inherent Diversity:** Gender and Environment analysis uses the concept of "gender" to emphasize that minimal biological differences between men and women have been socially, culturally and historically elaborated. As individuals and as members of various sociocultural units, men and women experience different socialization processes. As many feminists such as Boulding (1988) have stressed, gender identities are not homogenous but

cross-cut by other identities such as race, class, ethnicity, religion and age; these factors also vary over time and location (Hafkin and Bay, 1976; Robertson and Berger, 1986; Stamp, 1989). In an examination of agroforestry practice, these purports proved to be very significant. As I discuss further in Chapter 5, women and men, even within the same racial, ethnic and geographic group, but with different class, religious and age interests, have a variable labour commitment to agroforestry as well as unequal decision-making authority and control over the benefits of agroforestry.

The meaning of the word "environment" in a Gender and Environment approach also emphasizes the diversity and totality of social, cultural, economic, political and physical relationships in a certain landscape. In this sense, I interpret diversity as the variety and variability of relationships which can exist even within the same or a small geographic area. Embedded in this meaning is the notion of the environment as a physical landscape as well as a "sense of place" -- referring to both an individual and collective vision of one's physical and emotional milieu (Hay, 1988). Recently, Taylor and MacKenzie (1992:241) have adopted the analogy of "territoriality," as a conceptual explanation of space, place, social relations and power interactions. In either expression, an interpretation of "environment" draws on its linguistic roots in the French word environ meaning "surroundings". Environment is therefore



preferable to the term "ecology", because environment not only incorporates a holistic meaning of tangible and intangible "surroundings" but also, the pivotal role of human interaction with those surroundings. Deep ecologists and radical ecofeminists have argued that it is exactly the assumed centrality of humans in the ecosystem that has led to its degradation (Zimmerman, 1987; King, 1989). Although I acknowledge their opinion, I am less inclined to believe that it is possible to limit the influence of human beings, their history and societies on the natural ecosystem.

Just as Gender and Environment analysis uses the concept of gender to emphasize the diversity of relationships between men and women within various social units, a Gender and Environment approach also recognizes the diversity of personal, cultural, social, economic, political and ecological relationships incorporated by the concept of "environment." Whereas Kettel (1990, 1991a) has used the plural "environments" to describe a range of natural resource based contexts in which women are actively involved, I am less inclined to use the plural form in this analysis because I have interpreted the environment in a holistic or inclusive sense.

An appreciation of the diverse relationships in gender and environment issues encourages greater understanding of issues which span both the social and technical sciences. As my

discussion of results in Chapters 4, 5 and 6 indicate, this comprehensive approach improves an understanding of how, when and why certain cultural, social, economic, political and ecological relationships in agroforestry have evolved.

**The Influence and Interpretation of History:** Undoubtedly, the diversity of gender and environment issues is not static but transformed by both time and site specificity. For this reason, what existed a decade, or even a year before, will influence but not necessarily reflect the circumstances of a present-day society. Furthermore, although wider trends and patterns may be apparent, gender relations vis-à-vis the environment in one society may not be easily compared to another society because of different historical and contemporary experiences.

On the subject of agroforestry and gender relations few comprehensive historical studies have been carried out although notable exceptions include Hoskin's (1984) examination of indigenous and modern agroforestry practices in West Africa and the ethnoecological approach to incorporating local knowledge in agroforestry planning offered by Rocheleau et al (1989). On the most part however, many academic and project studies in agroforestry offer scant reference and uncritical analysis of the historical record of agriculture, animal husbandry and forest-based activities in a given area (for example, Vonk, 1986; Budd et al., 1990). For instance, Feldstein, Rocheleau and Buck

(1989) have compiled a case study and teaching notes on the CARE-Siaya AEP in the two-volume training compendium of "Working Together: Gender Analysis in Agriculture." In this case study "history" of agroforestry and the project begins with the origins of AEP with no reference to colonial or post-colonial issues central to agroforestry or their impact on gender relations in the project area. As well, this compendium, like many other references (for example, Vonk and Safman, 1991) refer to certain forestry practices as traditional, indigenous or cultural without qualification as to how, why and under what conditions did such practices evolved (Mbilinyi, 1985; Stamp, 1989).

In development practice an awareness of the impact of history may not be adequately reflected in project design or reports. In this study, I noted that certain historical "trivia" such as indigenous uses of trees, methods of seedling propagation etc. referred to in project evaluations and proposals from both the CARE-Siaya AEP and other local NGOs and government agencies in the district were unknown to extension workers -- even in cases where the extension worker had lived in the district most of his or her life. On the other hand, extension workers are often recipients of tremendous local and historical knowledge including experience from their own childhood and information gathered in the course of their work. This awareness does not tend to be fully appreciated or used in hierarchial project management.

must first be met before their position in society can be considered. In fact, as this study has found, women themselves may not perceive any separation between their immediate and strategic needs in agroforestry. Furthermore, women temporarily and sometimes, permanently, circumvent or resist constraints on their ability to meet their life conditions and thereby, challenge their position in society.

**External and Internal Gender-Based Power Relations:** Whether or not women's relationship with the environment is distinct from that of men's has been a keypoint in many feminist analyses of environmental issues (for example, King, 1989; Shiva, 1989; Diamond and Orenstein, 1990; Agarwal, 1992). I would argue that men and women experience both similar and different relationships with the environment. I would also stress that Gender and Environment analysis is highly applicable to an understanding of how these relationships have occurred over time and space because this analysis recognizes the crucial influence of the socially and culturally created relations between men and women and the intricate role of power relations in the shaping of these relations.

The notion of power relations as central to gender and environment issues is not new. Muntemba (1989) and Shiva (1989) have both shown how dynamic power relations are inextricably linked to changes in men's and women's relative control over the

environment and women's capacity to control their individual lives as well as contribute to the future of their family, community and wider society. While both of these scholars have brought critical attention to the impact of power relations on gender and environment issues work, new approaches to identifying and understanding the relationships between women, men and the environment are still being sought. In a recent article on gender and environment in India, Agarwal (1992) has raised an important point:

"The growing literature on ecofeminism in the West, and especially in the United States, conceptualizes the link between gender and then environment primarily in ideological terms. An intensifying struggle for survival in the developing world, however, highlights the material basis for this link and sets the background for an alternative formulation to ecofeminism, which I term "feminist environmentalism." (Agarwal, 1992:119)

While I agree that Agarwal's (1992) argument for a "feminist environmentalism" is well made, I would hesitate to separate the ideological from the material or to judge one component as more influential than another. The best way to explain my position is to again focus on the central role of power relations in moulding gender and environment relationships.

In this framework of Gender and Environment I have drawn upon the full meaning of "environment" to identify two key loci of power in gender relations which influence the operation and progress of agroforestry:

- **External Power Relations:** This locus of power is based on women and men's relative work and status in the household and their relative rights and status at the level of the community and state.

- **Internal Power Relations:** This locus of power incorporates individual perceptions, emotions and knowledge. In other words, internal power relations recognize that men and women may have a different but related "sense of place" and that their different perceptions, emotions and knowledge may be at various times, incomparable, complementary or conflictual.

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While external power relations are closely related to what Agarwal (1992) refers to as the material basis for the link between gender and environment, internal power relations are ideological in the sense that they develop and change through life experience. External and internal power relations do not exist in isolation from one another. Actually, they operate in such a way as to reinforce one another. As this study of agroforestry and gender relations revealed, changes in women's and men's material relationship with the environment (for example, productive and reproductive labour, control of land and trees etc.) were closely related to changing perceptions and knowledge of men's and women's relative responsibilities and rights. As well, a reverse relationship occurs because changes

in perceptions and knowledge were also be used determined (or sometimes rationalized) the material relationships between gender and environment. In order to frame the discussion of gender and agroforestry in subsequent chapters I turn to a more detailed discussion of external and internal gender-based power relations.

**External Power Relations:** In this study, I have identified two important and interrelated aspects of agroforestry where external gender-based power relations are at play:

- household labour allocation, decision-making and control of benefits associated with agroforestry (eg. fuel, fodder, fruit, cash income from the sale of tree products etc.);
- land and tree tenure in agroforestry.

**Household labour allocation, decision-making and control of benefits associated with agroforestry**

The way in which labour at the level of the household is differentially allocated, valued and represented is central to an understanding of the power relations between individual and groups of men and women at the level of the household and also, at other levels of society (Mies et al., 1988; Young, 1988b).

A key concept in the gender analysis of labour is the sexual division of labour (SDOL). Using Young's (1988b) GAD analysis, the SDOL can be defined as a form of social division and connection. The division of labour recognizes a differential allocation of tasks based on biological and socio-cultural logic. As Young (1988b:5) explains: "On the one hand, men and women are allocated to activities by the SDOL on the basis of a set of ideas about what men's and women's capacities are and what it is appropriate for them to do." On the other hand, the social connection implied by the SDOL ensures that "by making men and women undertake different activities, and produce different goods and services, they are made interdependent on each other" (Young, 1988b:5).

Although Young (1988b) has made a significant contribution to the understanding gender-based labour relations, I disagree that women's and men's relative on- and off-farm labour are interdependent. Rather, because men temporarily and sometimes permanently abandon their responsibilities (see Chapter 5), gender-based labour relations may be less interdependent than they are dependent on women. Furthermore, while dependency on women has increased this has not necessarily guaranteed women greater equality in household decision-making or control over financial or natural resources which are still dominated by men. Women may even lose certain rights which they previously possessed because of the significant demands on their time and



energy and subsequently, in a sense of frustration, desperation or obstinacy men may cling to attitudes or actions of superiority which reinforce at least an outward sense of their power in the household.

On the issue of gender and labour Rocheleau (1990) offers a stronger analysis. Rocheleau explains that a gender division of responsibility is marked by complementarity, conflict and coincidence of interests between men's and women's roles and priorities in land-use. Rocheleau (1990) suggests:

"Once the existing gender division of land use is understood, then fieldworkers and policymakers alike may build upon this to reinforce complementarity, resolve conflicts, and restore the balance between the rights and responsibilities shared between men and women in traditional, evolving, or experimental land use systems."  
(Rocheleau, 1990:432)

While Rocheleau increases an awareness of the conflictual as well as the coincidental and complementary relations between men and women, she does not acknowledge that an analysis of an existing set of relationships is merely a snapshot in time. As I emphasize, a Gender and Environment approach defines men's and women's on- and off-farm labour as well as their decision-making and control of agroforestry benefits within a socio-cultural and historical framework. In other words, present and future gender and environment issues cannot be fully understood without understanding the historical and dynamic socio-cultural background to these issues. Again, I stress that dynamic and

historically-derived social relations such as age, class, religious affiliation, ethnicity and education may strongly influence the relations between men and women and specifically, the gender division of labour.

As Suda (1990) points out, overall the gender division of labour has tended to operate against women and in favour of men -- in such a way that it is both cause and consequence of gender inequality. I extend Suda's (1990) argument further, by stressing that gender inequality induced by a discriminatory gender division of labour has had negative repercussions for both women and men. Men, women, children and all of local society suffer from women's lack of empowerment and as many studies have shown, this is not simply a point of theory but a matter of reality (see for example, Scott, 1985; Agarwal, 1986; Dankelman and Davison, 1988).

A key aspect of the relationship between women's productive and reproductive labour, decision-making and control has not been adequately assessed in evaluations and analyses of the CARE-Siaya Agroforestry Extension Project (AEP). In the CARE-Siaya AEP, I found that the quantity, quality and range of women's labour in agroforestry systems tended to be underestimated. In some cases the project has actually reinforced men's opportunities to the detriment or neglect of women's labour. At a practical level, this situation is evident in approaches to agroforestry extension

and project activities, which primarily associate women with domestic issues in agroforestry (for example, fuelwood, food crops etc.) while consciously or unconsciously excluding them from issues which may entail what extensionists interpreted as a direct challenge to a "male domain" such as the marketing of certain types of tree products (for example, timber, oranges) and farm credit or the purchase of implements. While Boserup (1970) has referred to this type of situation as a "productivity gap," I think it is a problem of falsely separating women's productive and reproductive labour, decision-making and control -- a distinction which women themselves do not make. For instance, while women stressed the importance and impacts of labour shortages in agroforestry, they did not always differentiate between labour demands for domestic or on-farm activities from off-farm or economic or community responsibilities. Women felt that all of their work was essential to the subsistence and progress of their family. Moreover, their efforts to quickly cultivate an extra area of maize and beans or to plant out additional tree seedlings during a season of particularly high rainfall are both a survival and production strategies. If the next rainy season is delayed or doesn't come at all, grains and legumes can be eaten or kept for seed for the following season and the trees can be harvested for animal fodder or firewood for sale.

A better understanding of the inextricable linkage between women's productive and reproductive labour can be reached by using Mies' (1986) use of the concept of "production of life" which Kettel (1991) has also employed in her gender and environments analysis. The premise of the "production of life" is that production and reproduction are inextricably linked. As Mies (1988) explains, land and women's productive and reproductive labour are the most crucial requirements for the "production of life." The results of this study clearly support this argument with the deceptively simple assertion that without women's labour, agroforestry could not be practised in Siaya District.

Using the concept of "the production of life" in Gender and Environment analysis prevents the possibility of distinguishing between women's on-farm and off-farm labour, decision-making, control of benefits (for example, land, trees, crops, income etc.) and status. This argument supports the rejection of the public/private dichotomy which Stamp (1989) has advocated. The private/public dichotomy tends to identify women as the seemingly "powerless," "private" domestic sphere while men are seen as occupying "powerful," "public" economic and political sphere. As Stamp (1989) has accurately stated, the imposition of the private/public dichotomy ignores the control which some African women have historically exerted over their own labour and their economic and political authority. Therefore, Stamp (1989)

argues, the appropriateness of development plans which are concerned with involving women in the public sphere or recognizing women's significant contributions to the domestic sphere may not necessarily result in reduced gender inequality.

### **Land and Tree Tenure in Agroforestry**

Land is a key requirement for agroforestry. Issues of land availability, accessibility, control, quality and quantity are significant in many areas of the Third World. In gender and environment issues, the connection between gender relations and land tenure, including the various rights to natural resources such as trees, water and crops, are extremely important. An analysis of this subject starts with an understanding of how unequal relations between men and women regarding land are externally reinforced by legal structures.

The complexity of external power relations in agroforestry is evident in this study because two co-existing but not always co-operative legal systems operate in Siaya. One legal system is "customary" in that it represents past traditions of the local ethnic group, the Luo. Yet, in this study, it became apparent that there was a tendency to interpret customary laws associated with land, trees or cultivation as "traditional" without consideration of how customs and beliefs have changed over time (Stamp, 1989). In most issues concerning land, women -- and

especially less powerful women such as daughters-in-law or widows -- are often marginalized by the manipulation and control of "customary law" by authoritative men and sometimes certain women in the family or community.

The other legal system affecting land and tree tenure is state law. With few exceptions, current statutory law in many developing countries is transferred or strongly influenced by colonial development policy (Okeyo, 1989). The historical perspective adopted in this study reveals how the concept of "tenure" -- a set of access or ownership rights over a specific resource -- has been an integral part and product of capitalist development in Kenya.

**Internal Power Relations:** Typically, development theorists and practitioners have been preoccupied with the external structures that influence gender relations. Gender and Environment analysis uncovers a second locus of power which I describe as internal or endogenous. Internal power represents the "sense of place," an individual's and/or a society's perceptions, emotion and experience of environment. Clearly, women's and men's different "sense of place" affect their "external" participation in issues of farm labour, decision-making and the control of resources. For instance, an individual agroforestry farmer can be influenced by beliefs or "taboos," many of which are gender-based (Chavangi, Engelhard and Jones, 1985). Upon closer examination "the sense

of place" can be seen as reinforcing the gender division of labour, decision-making and control of agroforestry. But "sense of place" can also illuminate the ways in which women resist or circumvent certain obstacles in their lives, define their immediate and strategic needs and therefore, come closer to reaching their goals.

The process by which men and women articulate and advance their individual and communal goals is an area of significant concern to a Gender and Environment approach. GAD recognizes the relations between women's and men's immediate conditions and strategic position at all levels of society (Young, 1988b). Yet I argue that although immediate and strategic needs can be a useful distinction for a researcher or project staff, this division may not necessary be recognized by farmers and particularly, women. As this study found, the dichotomy of immediate conditions versus strategic position is expressed more often by men than by women because men have been assured of benefits in both contexts. Women on the other hand may resist the distinction between immediate conditions and strategic position because they cannot be assured that their labour and decisions will translate into strategic benefits and rights. For this reason, a Gender and Environment approach should not add a fourth layer of new projects aimed at "equal rights" to women's "triple day." Instead, Gender and Environment must be directed at re-examining and transforming gender relations at all levels

of society and within development agencies themselves toward the elimination of gender discrimination and the promotion of equality and empowerment.

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#### NOTES

1. Most notable in the Canadian context are the research activities of the University of Guelph and the Forestry Canada policy and research centre in Sault Ste. Marie.
2. In this study, **gender** refers to the social construction of differences between men and women. **Class** refers to the socioeconomic status of individuals and particular socioeconomic interests shared as a group. **Race** involves socially reinforced notions of superiority based on skin colour while **ethnicity** refers to differentiation among members of the same race along geographic and kinship lines. **Age** as a social factor involves both physical years of age and social representation in a particular age cohort. These are major social factors although other factors and subdivisions exist.
3. The term and concept of "household" in this study refers to a social unit with porous boundaries which may or may not resemble a "nuclear family" (mother, father and children). More likely, households are dynamic units with varying membership; their objectives may vary by relations of age, kinship and friendship and their links to the wider society are apparent (Arizpe, 1982).
4. See for example, Dixon-Mueller (1985), Hoskins (1979), Scott (1980).
5. For instance see recent reports produced by the FAO (1990) and the World Bank (1989).
6. Certainly, it can be argued that CARE-Kenya has made this deceptively smooth transition by changing its WID desk to the GAD unit while AEP project reports labelled "gender" refer specifically to "women" (AEP #230).



7. At the conference Gender and Environment: Lessons from Social Forestry, sponsored by the Aga Khan Foundation, Winrock International and York University (Toronto, Feb. 1990) I heard such a rationalization from a CIDA representative.
8. One may argue that the analysis provided by Feldstein and Poats (1989) has provided one method of encouraging change in development structures and attitudes but this training manual has used contributions from the area of GAD very selectively (see p. 21). The better training materials have been produced by CCIC (1991) and Warren (1992).
9. These distinctions between immediate/strategic needs were identified by CARE-Siaya AEP extension workers at the Gender and Agroforestry Seminar, September, 1991.

## CHAPTER 2

### METHODOLOGY AND METHODS

In this chapter I concentrate on four subjects: 1) methodological principles in Gender and Environment analysis; 2) the research methods selected and used in this study; 3) data analysis; and, 4) the feedback process.

#### 1) Methodological Principles in Gender and Environment Analysis:

In her discussion of epistemology or theories of knowledge, Maguire (1987) outlines three processes of inquiry: technical or empirical, interpretive and critical. Typically, empirical research emphasizes quantitative methods that place considerable trust in numbers, variables or mathematical equations to represent, compare and generalize situations, opinions or concepts. Even among some of their adherents, quantitative methods are criticized because evidence based on numerical values often neglects or misrepresents the reality and complexity of human lives and relations (for example, see Campbell, Vermuellen and Lynam, 1991). As Waring (1991) has argued, census data are perhaps the best example of traditional empiricism as they indicate individual points at a single moment in time without showing a history of social relationships which underlie their articulation or the bias evident in the creation of response categories.

Gender and Environment recognizes the various approaches of inquiry, although it tends to elevate the importance of interpretive and critical knowledge. Interpretive knowledge focuses on how individual and group interpretations of reality influence people and their interaction with the social, cultural, political, economic and physical environment (Maguire, 1987). Critical knowledge involves self-reflection and historical analysis of the relationships and contradictions in the social, political, economic and physical environment. In both interpretive and critical knowledge, the purpose of research is not to narrowly accept or reject a hypothesis but alternatively, to create an understanding of a certain situation and its wider implications (Maguire, 1987). This fundamental objective defines the selection of research methods in Gender and Environment analysis. For instance, I abandoned the idea of a formal, controlled interview and instead, encouraged discussions in the local language, Dholuo, between farmers and between farmers and the research team (my research assistants and I). As Oakley (1981) explains, interviewing women may be a contradiction because the standard interview method has been part of a male-dominated research paradigm that has worked to intimidate women and suppress the importance of power relationships, perspective, emotion and experience. As I also found during this fieldwork, interviewing farmers about land is a highly sensitive issue because of farmers past experience with government efforts to consolidate and register land since the early 1960s.

As well, an important part of qualitative data analysis is to pay attention to the range and diversity of experiences and perspectives in the data. This means an identification of opinions, expressions and feelings and the context in which they were articulated. As Agar (1984) points out, experiences or perspectives expressed once or twice are interesting but not particularly reliable. Rather, it is the intensity, specificity and consistency in the analysis of qualitative data which are the most accurate indicators of significance.

Unfortunately, alternatives to the formal interview process are not well documented. One area of literature I examined in order to design the questions and the discussion process I wanted to achieve was on focus groups (for example, see Krueger, 1988). This method originated in market research but has enjoyed a wider application in social research. Focus groups work well because they tap into human tendencies including opinions and perspectives. Yet arranging focus groups with characteristics based on Western guidelines is not always possible (for full guidelines see Krueger, 1988). For instance, "group" implies a common experience. The commonality among farmers in this study was participation in the CARE-Kenya AEP, but I found that 16 per cent of the farmers selected perceived that they were not practising agroforestry (see Chapter 6). Focus groups are also arranged in order to maintain anonymity in the group. On a local level, this guarantee was impossible because relationships of kinship and friendship are

widespread. Likewise, arranging central meeting places for farmers to meet would mean removing them from the context of their farm and agroforestry system. Particularly, for women such arrangements are often inconvenient and sometimes, not permitted by male members of the family. However, the literature on focus groups does indicate how discussions can be designed to obtain perceptions on a defined area of interest while maintaining flexibility and a permissive, non-threatening discussion environment (Krueger, 1988). On this point, I also found elements of participatory research quite helpful and particularly, the encouragement offered by Bunch (1985) and Maguire (1987).

It is important to explain that a Gender and Environment approach is an alternative research process because it emphasizes interpretive and critical knowledge, but not all "alternative" research is interpretive and critical. For instance, Salole (1991) has accurately pointed out how the rhetoric on "alternative" approaches to research in development is reinforced by agencies that may use the terminology without accepting its underlying concepts. Furthermore, Harding (1987) has argued that some "alternative " research is androcentric and in practice, only marginally concerned with women's knowledge and gender issues.

Inevitably, Gender and Environment is shaped by what it rejects as well as what it accepts from methodological debates (Harding, 1987). In keeping with this principle, the design of my research

process borrowed from, but also critiqued, qualitative and quantitative approaches from various academic and non-academic domains. For example, I examined ethnographic approaches by Agar (1980) and Kirby and McKenna (1989) as well as a various social science research techniques for example, Lofland (1971), Babbie (1979), Yin (1984), Krueger (1988) and Jorgensen (1989). I also examined material on development-oriented research such as Bunch (1985), Maguire (1987), McCracken, Petty and Conway (1988) and Chambers, Pacey and Thrupp (1989) in addition to contributions specifically from the field of agroforestry or community forestry such as Raintree and Young (1983), Bruce (1989), Rocheleau et. al. (1989) and Shepard (1990). Although guidelines for gender and environment research are scarce, I examined a wide range of gender analysis material including Oakley (1981), Tiano (1981), Potash (1985), Rocheleau (1987) and Feldstein and Poats (1989).

## 2) Research Methods and Collection of Data:

When two or more different research methods are used to investigate an issue in order to confirm findings and to obtain both breadth and depth of information, this approach is referred to as "triangulation." Triangulation defined my selection of multiple research methods which included:

- a literature review;
- selection and training of research assistants;
- selection of farms;

- semi-structured questions and discussions with farmers;
- interviews with local officials and extension workers;
- life histories and participant observation.

**Literature Review:** In Spring 1990, I began a review of relevant literature in the Faculty of Environmental Studies at York University and the Faculty of Forestry, University of Toronto. This material focussed primarily on conceptual frameworks in environmental studies and current issues in international forestry and agroforestry. I also reviewed literature on feminism and gender analysis during the 1990 Summer Institute on Gender and Development at St. Mary's University in Halifax. This collection and analysis of literature continued in Kenya at the University of Nairobi when I arrived in February 1991. As well, at the Kenyan National Archives I reviewed material on Kenyan land law, colonial administration in Siaya District and Kenyan environment and development policy since 1963. Based on this archival work, it was evident that there was a deficiency in both the quality and quantity of materials compiled during the colonial period that specifically addressed farm-level forestry and women's issues.

In addition, I examined secondary literature from CARE-Kenya and specifically the Agroforestry Extension Project (AEP). This information encompassed annual reports, external consultant evaluations and in-house monitoring studies.

Selection and Training of Research Assistants: Research assistants provided a crucial link between the researcher and participants in the study. Originally, I had expected to employ a single research assistant but due to changes in the research process -- specifically, carrying out a district-wide study and providing feedback to farmers -- I decided to engage three research assistants (one male and two female). The assistants were graduates of secondary school and residents of the district and they were selected after discussions with 27 possible candidates who (by word-of-mouth) had heard that a position was available.

While I had no set criteria for their selection, I sought assistants who were alert and sensitive to the changes occurring within their district. This interest and awareness was the foundation of a two-week informal but intensive "training" prior to carrying out the actual fieldwork. This training served several purposes. First, it provided the research assistants and I with an opportunity to become familiar with each other and the objectives of the study. We traversed Siaya District and discussed the theory and practice of agroforestry and the geography, society and economy of Siaya District in detail. This exercise demonstrated that although research assistants might be familiar with their own local area this does not necessarily mean they grasp the cultural and ecological diversity within their District.

Secondly, this training reduced the shyness or hesitation often



experienced by less experienced assistants. It also confronted and diffused potential problems associated with meeting farmers and officials and discussing socially and politically sensitive information such as gender relations, farm productivity and land tenure. During the training period we casually met with local officials, extension workers and farmers and then discussed our experiences. When we encountered a certain problem such as the tendency for males to dominate the conversation in mixed group discussions, we discussed different approaches to the problem and role-played the solution. As well, the research assistants and I concentrated on the difference between an "interview" and the "discussions" which I wanted to achieve.

Thirdly, a study which focusses on gender relations must recognize that certain gender relations are occurring even within the research team. This situation was immediately evident between male and female research assistants or extension workers. In one incident, I noticed that the female research assistants were being relegated to note-taking by the male research assistant and male extension worker who dominated the discussion group. In order to address such problems, I realized that as a research team we required a greater insight about the importance and impact of gender relations both in the manner in which we experience these issues as a group and the way in which farmers experience them. This topic was not set aside for any particular "lesson" in the training period because I did not want to be a teacher or

supervisor for the research team in any formal sense. Instead, I facilitated questions or points related to gender relations throughout our time together as a research team and following discussions with farmers. During the training period, a useful exercise we carried out to identify and discuss the impact of gender relations on everyday life in Siaya involved devising a list of keywords, proverbs and stories in Dholuo which related to women, men and environment. While this exercise was useful in explaining how gender has been socially and culturally evolved in Siaya, it also was useful to examine the origin of certain concepts and the impact of translation to and from English or Dholuo (see also, Jorgensen, 1989).

Finally, the training of the research assistants ensured that the research team were familiar with key issues in the study and could establish a rapport with farmers which was identified us as independent from the AEP and CARE-Siaya staff. This impartiality was essential because we wanted to ensure farmers that our team did not represent CARE-Siaya nor should farmers feel that they could not openly discuss the AEP.

Although the CARE-Siaya extension workers were often called upon to introduce us to the farmers in their location when extension workers did attend the discussions they were asked to act as observers rather than facilitators of the discussion. In some cases, following the discussions, we asked extension workers to

offer their interpretation of the discussion and any observations. In a few cases, however, I did not invite the extension worker to attend the discussion groups because in previous discussions with farmers he or she was openly uninterested, rude or outspoken. I attributed such behaviour to a personal ambivalence or resistance to the topic of gender issues in agroforestry and/or a sense that his or her specific work was being evaluated despite my assurance otherwise. As well, in other cases, extension workers felt compelled to provide answers to questions posed to the farmers -- particularly when farmers hesitated to comment on sensitive questions. In such cases we politely interjected and changed the topic of discussion. Based on this experience, it is possible to conclude that while researchers might benefit from the familiarity which some extension workers share with farmers, their involvement in the research process may not always be positive. Although time, logistics and competing interests often restrict the possibility of extension workers being involved in the training which research assistants undergo, in retrospect the need for awareness building among some AEP project staff was also apparent.

Selection of Farms: Because the approach of the CARE-Siaya Agroforestry Extension Project (AEP) has only recently changed from its previous focus on women's (farmers') groups to targeting the individual farmer, it does not maintain a current list of individual farmers involved in the AEP but rather, a list of participating farmers groups. For more specific information about

individual farms and farmers, I was referred to the AEP extension staff who were able to list various farmers participating in agroforestry.

I recognized however, that allowing the extension workers to select the farmers to be involved in the discussions of this study would introduce a significant amount of bias into this study because I found that extension workers tend to visit farmers with whom they are familiar. These farmers also tended to be more progressive than other farmers involved in the AEP particularly in the sense that they were often of a higher socio-economic class and practised a variety of agroforestry techniques on their farms (for example, woodlots, alley-cropping, border planting etc.). On the other hand, I did not have the time to carry out my own inventory of AEP farms and farmers. Instead, I decided to select farms involved in this study from a list of individual farmers which was compiled for the district-wide 1989 Agroforestry Impact Survey. This survey was carried out by CARE-Siaya in co-operation with the International Council for Research in Agroforestry (ICRAF) based in Nairobi (see Scherr and Alitsi, 1990).

The 1989 survey provided a useful starting point and cross-reference to this study because it had identified a population of AEP farmers from various farmers groups throughout the five divisions of Siaya District and also, because its results quantified and described on-farm agroforestry interventions (see

Scherr and Alitsi, 1991). However, the 1989 study did not include substantial qualitative data or attempt to analyze the connection between gender relations and agroforestry in detail.

All farms involved in the 1989 study included at least one adult family member who was a participant in the CARE-Siaya AEP and therefore, (theoretically at least) the farms were practising agroforestry. In the selection of my sample, I was not preoccupied with a single individual farmer but more concerned with the overall farm household because I was interested in the gender relations between members of a household and the relations between the household and their wider society.

It was also necessary that the sample in the study be small enough to be covered during seven months of farm visits, but large enough to yield useful information. Intensive interviewing usually involves 20-50 cases (Lofland, 1971). In this study, the "core" sample of farms totalled 38 (see map on following page). Using the population frame provided by the 1989 CARE/ICRAF Agroforestry Impact Survey, which was stratified by five administrative Division and agro-ecological zone (low, medium and high potential), I randomly selected eight farms within each division of the district in order to gain a broad view of the environmental factors which may influence gender relations and agroforestry. This sample was randomly selected without replacement. For this reason, my original intent was to visit 40 farms but in two cases, the contact

farmer who was also the only member of the family involved in the AEP farmers' group had died.

A further 17 farms, which I refer to as "special interest," were selected in medium potential Boro Division in order to more closely examine the problems faced by four particular types of households -

- widows and/or elderly farmers;
- recently established compounds owned by younger farmers;
- polygamous households (a minimum of three wives with above average family size)
- monogamous households.

I differentiated these particular households because I expected to find that certain farms such as widows or the elderly or monogamous households might experience labour or land shortages differently than younger or polygamous households. These farms were also in medium potential areas and therefore it was not expected that agro-ecological or climatic would be of significance. These farms were not selected randomly nor were they involved in the 1989 Agroforestry Impact Survey. Instead, I asked four Boro Division extension workers to identify a total of five such farmers from their locations. In two locations, we were unable to visit three of the selected farms due to the unavailability of farmers and therefore, we visited 17 rather than 20 farms.

In total, 55 farms were involved in the study. We did not prevent the participation of both men and women in the discussions because the nature of this study is to understand the relationships between men and women and the environment. While, we recognized that mixed discussion groups involving men and women had different dynamics the majority of the discussion groups involved women only. The reason for this occurrence is strongly linked to the fact that Siaya District experiences vast out-migration of working age men. Hence, women make up the overwhelming majority of full-time residents of the farm. Some of these discussion groups involved only an individual farmer and the research team because the farmer was temporarily alone (husband or co-wife was absent) or permanently the only full-time resident (widow, monogamous household with absent husband). In total, 62 women and 41 men were involved in the discussions. In all of these cases, we used the same list of "core" questions but the special interest discussions in Boro Division included additional questions related to that particular situation. Below I discuss the design of the questions and the process of the discussions.

**Semi-Structured Discussions:** Following the research assistants training I concentrated on the design and pre-testing of a semi-structured questionnaire. Both structured and unstructured questions were used in the discussions with farmers which typically lasted a minimum of two hours. Certain core questions were asked during all discussions (Appendix 1). The core questions sought

information on the on-farm agroforestry system, labour and gender-based responsibilities related to agroforestry, farmer attitudes, motivations, personal and collective priorities and goals, leadership patterns within the extended families and farmer perceptions and experience with land and tree tenure. Several "internal checks" were constructed in the core questions in order to make sure that farmers' remarks were not later changed. Other questions of both interest and clarification were also included as time and circumstance permitted.

In order to finalize the list of "core" questions and to confirm that the discussion process worked smoothly, the questionnaire was pre-tested with three farms and subsequent changes were made based on the responses from farmers, comments by CARE-Siaya AEP staff and my own reflections.

In the course of each farm visit, research assistants asked farmers their name, marital status, age, education, number of full- and part-time household residents and estimated the area of the farm (compound and fields). In the pre-testing of the questionnaire farmers were very reluctant to answer to questions about their agricultural yields and farm income. Rather than risk alienating farmers during the course of the discussions, I decided to use "proxy indicators" (for example, iron sheet roof, well, ox-plow etc.) to estimate the socio-economic status of the farm (Rugh, 1986) and rely on the economic data for the "core" sample of farms



provided by the 1989 Agroforestry Impact Survey.

All discussions were facilitated in the local language, Dholuo, by the research assistants, who shared the tasks of asking questions, note-taking and sometimes translation (for my benefit). I attended some but not all of these meetings because I wanted to examine the relative impact that my presence as a white, Canadian woman would have on the discussions. Although I found my presence had minimal impact in the discussions of responsibilities and perceptions of labour, land, trees and the agroforestry project overall, there was a notable difference in the section on farmers' priorities and goals related to agroforestry. For instance, farmers would exaggerate their "requirements for agroforestry" to include such items as tractors and wells. On the other hand, some farmers also identified my presence with a serious opportunity to explain in detail their concerns regarding agroforestry and in particular, the AEP.

All of the core questions were used in both individual and group discussions. The latter comprised family members (at least one of whom was a AEP group member) from the selected farm and occasionally neighbours and extended family would attend the discussion groups. Individual discussions always involved an AEP group member. I did not consciously decide that one type of discussion was better than another because conversations with individuals and groups have their own particular dynamics which are

Official and AEP Extension Worker Interviews: As Olenja (1989) indicates, discussions with local administrators are useful because they can provide an overview of the community and its development issues. I conducted interviews with the District Lands Registrar, District Officer of the Central Bureau of Statistics, District Forestry Officer and District Officer, Deputy and locational-level Community Social Workers for Social Services. I also met with the Development Secretary of the local Anglican diocese, the local Catholic priest and leaders of farmers' groups. In addition, I interviewed several CARE-Siaya extension workers.

Conversations with many of the government officials, church and community leaders were not discussions but formal interviews because they were conducted by me, in English and lasted approximately one hour. In one case, an official requested to see the questions before an interview appointment was arranged. Questions were specifically designed with reference to the Ministry which the official represented. Most questions focused on the specific activities, policies and perspectives of the department or organization in which the representative worked. However, during the interviews, official statements on issues central to this study were often flavoured by the personal viewpoints and experience of the individuals interviewed. For instance, the progressive work in gender issues in which some church agencies in Siaya are involved reflect the vitality of their leaders and congregations.<sup>1</sup> On the other hand, corruption and ambivalence in the civil service to

these same issues seems to reflect the ethics of the individual who heads the department. Distinguishing the official viewpoint from the personal seemed extremely difficult if not futile.

**Life Histories and Participant Observation:** Life histories are an interesting research technique because they show changes in relationships and the environment over time. I had originally planned to speak with at least one elder from each division in the district who served as a customary law advisor in cases of land disputes however, due to time restrictions, I was able to conduct only two life histories. I located the two elders who were interviewed based on suggestions made by farmers from two locations and the advice of CARE-extension workers. In these informal interviews the elders (both of who were men) were asked to describe and explain the changes in the local environment, gender relations and land law during their lifetime. These discussions each lasted over four hours and fortunately, both elders agreed to let us tape the discussion. At the end of our meeting we replayed the cassette and gave the elders a small contribution towards "sugar." In retrospect, the information which these discussion provided was fascinating but not easily analyzed because of difficulties in translation (certain words or concepts related to forests or land law could not be completely translated by the research assistants) and so much of the information is locally and individually specific. Nonetheless, the method served as an excellent learning experience.

Ample opportunity for participant observation occurred over the seven months of my visits to farmers as well as my daily life in Siaya which included visiting friends, market days, church services, funerals and women's group meetings. While this research technique is influential in shaping the researcher's interpretation of a particular environment or society, it also demands a significant degree of realism -- while I may have been "observing" people and events around me, as an outsider of a different race and class I was also being observed by local people. This realization tended to influence the extent and the types of activities in which I participated in community life. For instance, while attending church was acceptable behaviour, I did not feel that attending local bars in the evening to discuss current and local events was at all appropriate.

### 3) Data Analysis:

Data analysis consists of breaking down data into manageable pieces: categorizing, tabulating, examining sequences and patterns or otherwise recombining the data in a meaningful way to address the initial propositions of a study (Yin, 1984; Jorgensen, 1989). While computers and various software packages expedite the process of data compilation, the management of qualitative data remains a monumental task for the researcher. I recognized this situation early in the research process as I soon became aware of the vast information being generated from the discussions. As a result, I

started to compile the data by computer on an ongoing basis while the remaining discussions progressed. This compilation involved four steps: transcribing; debriefing; quick-coding and analysis.

Each of the research assistants would compile his or her own discussion notes. A minimum of two research assistants attended the discussion groups so there were at least two sets of notes. In two cases (both were "special interest" interviews), only one set of notes was available from the research assistants and in place of a second set, an extension worker present during the discussion was asked to take notes. These notes included both verbatim and non-verbatim information. I also took my own notes based on my observations, questions, and translated discussion. Almost every other day, the research assistants and I met to review the discussion notes and "debrief" ourselves regarding the most recent farm discussions. Ideally, this systematic process should have been done immediately after every discussion but travelling distances in the district usually precluded this possibility. There were only eight cases where variation existed in the translation from Dholuo to English. The most common case occurred when the research assistants used significantly different English words to describe or explain a remark made by farmers. I would ask the assistants to explain their translation and any conflict in interpretation was noted. In cases where the notes differed I chose to accept the majority opinion and if this was not possible, I noted any ambiguity in the results. During the debriefing we

also focused on any changes in the process of the discussions -- for instance, cases where the farm could not be toured, or where certain questions were not asked, were noted.

The next stage involved my "quick coding" of the two or three discussion notes (Appendix 2). This cover sheet provided me with a quick documented overview of the discussions and proved to be a very effective reference when I had duplicate or triplicate copies of discussion notes for the 55 farms. The quick coding also facilitated simple quantitative analysis of baseline data including percentages, ranges and averages.

Qualitative analysis in this study sought trends and patterns in the data collected. Certain "clues" such as words, phrases and concepts which recurred through the discussion transcripts, were highlighted. If such patterns could be established, I then looked for similarities between these cases. For instance, if many farmers reported that a shortage of land was preventing them from carrying out agroforestry, I then cross-referenced these cases with other factors such as area of the farm, socio-economic status and agro-ecological zone. The context of the comments was also considered.

Understanding the context of a remark requires not only analysis of spoken words but also less obvious indicators such as group dynamics and individual "body language." For instance, both

men and women could raise their voices or use certain rather vivid adjectives or facial expressions when describing or explaining a situation on their farm. One of my research assistants remarked, "she pushed her lips together and looked as if she would bite me when I asked about the small piece of land her sons had given her." As well, during many discussions, we noticed that women were simultaneously occupied with activities such as peeling cassava, knitting, feeding a child etc. Often if women were stressing a point they would abandon this activity and speak directly to the point. Discomfort with certain points being discussed often led women to move about or retreat into their task. During the training of the research assistants I encouraged the research assistants to be alert to this type of emphasis and intensity of farmers remarks and when such behaviour was noted by the research assistants I carefully considered these results in the data analysis.

#### 4) The Feedback Process

The next stage in the research process I refer to as **farmer feedback**; this involved revisiting the 55 homes and discussing the information generated by the study with the farmers. Although it was already our intention to do so, our return visit to the farms was strongly encouraged by farmers during the initial discussions. In fact, forty-five per cent of the farmers specifically asked us to return to visit them again and to tell them about the results of

the study.

Apart from my own sense of commitment to the farmers who had contributed to this study, the feedback process was extremely valuable in terms of verifying or testing the initial results of the study. For instance, farmers were asked if certain points they made during the initial discussions were still relevant. In many cases, such verification encouraged farmers to elaborate further on their opinions and experience because the rapport between the research assistants and the farmers was more comfortable. In many cases new data were obtained from these return discussions and this information also contributed to the final analysis of data.

The research assistants and I were very well received in these second visits. Farmers repeatedly complimented us on our efforts by saying that in past surveys by CARE-Siaya and government extension workers, no one had returned the information to them; one farmer even said she thought she had given the wrong answers and that was why no one had returned with the results!

Besides providing farmers with the initial results of the study, it was also important to discuss the findings with CARE-Siaya AEP extension workers. This meeting was organized as full-day seminar in Siaya in September 1991. The purpose of this feedback component was to provide extension workers with an opportunity to discuss in large and small groups the significance of the study's results and



express their experiences and recommendations for the (Chapter 7).

ponents of the feedback process included a public lecture on the study presented at the Department of Urban and Planning at the University of Nairobi in November 1991, a report to the national office of CARE-Kenya and an informal session at the International Development Research Centre in March 1992. Finally, the most comprehensive report of this study is this thesis.

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### NOTES

For example, in one church agency, the leader is of the opinion that women have already assumed the burden of development at many levels of society and the question should be one of "where are men in the development process."

## CHAPTER 3

### BACKGROUND TO GENDER RELATIONS AND AGROFORESTRY IN SIAYA

The purpose of this chapter is to appreciate the historical context in which issues of gender, environment and development have emerged in Siaya District and its relevance to a broader understanding of the setting in which the CARE-Siaya Agroforestry Extension Project (AEP) operates.<sup>1</sup> The chapter is divided into two sections: the first section addresses the history of Siaya during the pre-colonial and colonial eras. The second section discusses the post-Independence era in Kenya and current development-related problems facing Siaya district. The section ends with a brief background to the CARE-Siaya AEP.

#### A Brief History of Siaya District

While there is a rich literature on the history of the Luo people and Siaya District, this material is fragmented. As a result, assembling the relevant literature for this study indicated many contradictions and several gaps in an understanding of contemporary Siaya. Nevertheless, my review of the academic literature and Government of Kenya archives on topics related to issues of gender, environment and development yielded some interesting points including the recognition that:

- contrary to popular expression, Luo men may have played a significantly greater role in agricultural production in pre-colonial and early colonial Siaya District;
- also, contrary to common reason, land among the Luo has not been owned by men since "time immemorial;"
- unequal relations between men, women and the environment have been increased by the commoditization and Westernization of the natural environment.

### Pre-Colonial History

The Luo are a Western Nilotic people who originated as a distinct ethnic and linguistic group (circa 1000 A.D.) in the region near the Upper Nile Valley and the Bahr-el-Ghazal Provinces in Sudan (Ocholla-Ayayo, 1976). The weak chronology and interpretation of Luo migrations into the area now known as Siaya (1490-1600) are only part of the complex and unresolved historical record of pre-colonial Luo society (Ogot, 1967). For this reason, there is no single analysis of pre-colonial land-use in Siaya, and gender relations among the Luo.

The work of Bookman (1973) in addition to Cohen and Odhiambo (1991) offer the most illuminating analyses of pre-colonial gender

relations and land-use patterns in Siaya District. Bookman (1973) concentrates on **socio-economic** factors while Cohen and Odhiambo (1991) focus on the importance of changing **settlement** patterns and the **creation of history** among the Luo.

Bookman (1973) suggests that the original mixed economy of the Luo was probably similar to their neighbouring ethnic groups, the Nuer and Dinka. It was likely due to competition from these neighbours for scarce grazing land that, over a period of three to four centuries, several southward Luo migrations into Uganda and further south to the region surrounding Nyanza (Lake Victoria) took place (Ogot, 1967). Despite the value of fishing in the Luo economy and their self-identification as Jonam or "people of the lakes and rivers," cattle have been the main unit of prestige, investment and exchange among the Luo (Ocholla-Ayayo, 1976:35). Pastoralism, was the major land use pattern in the pre-migratory Luo settlements and the leading determinant for inhabiting the semi-arid grasslands bordering Nyanza. Prior to arriving in Nyanza both agriculture and fishing were of supplementary socio-economic interest to the Luo (Ocholla-Ayayo, 1976). Nowhere in the historical literature is there any evidence that prior to their southward migration the Luo practised any form of agroforestry in so far as intentionally integrating the components of livestock, trees and crops.

When the Luo first inhabited the grasslands bordering Nyanza, pastoralism continued to dominate their pattern of land-use and the

(Bookman, 1973, Ocholla-Ayayo, 1976). For Cohen and Odhiambo (1991), it is not pastoralism that shaped the Luo's new environment but the dynamic ancestral settlement of gunda bur (gunda refers to land where ancestors are buried) that still remains at the core of Luo identity and association.

Cohen and Odhiambo (1991) argue that the gunda bur was a largely self-sufficient fortress where agnatic as well as non-agnatic kin lived. In the functioning of these settlements, alliances built on friendship (osepe) could overrule patrilineality (offspring of the same male ancestor) and segmentation (a line of land is concurrent with a line of related members of a family). For example, jodak who were typically from other ethnic groups or clans were provided with temporary land use rights in return for contributions towards communal labour (saga) and defence (see Ocholla-Ayayo, 1976). Women were also allocated exclusive land rights as daughters or sisters-in-law. As the authors explain:

In stressing the patrilineage as the fundamental organizing unit within Luo society, and segmentation as the essential process of combination and separation...(and) by giving prominence to patrilineality, powerful presumptions are introduced into the study of the Luo past concerning the nature of action and the explanation of event. (Cohen and Odhiambo, 1991:22)

Thus, this interpretation confronts one of the most basic tenets of Luo so-called "traditional" land tenure -- that since "time immemorial" Luo land has always been owned, allocated and used on the principle of patrilineality and agnatic kinship (Cohen and Odhiambo, 1991).

Within a span of perhaps one or two centuries, Bookman (1973), Ocholla-Ayayo (1976) and Cohen and Odhiambo (1991) indicate that a significant shift occurred in the balance between the three components of the Luo economy -- pastoralism, agriculture and pisciculture. This shift involved an increase in cultivation as a result of a progressive reduction of cattle herds and the expansion of settlement away from the more densely populated perimeter of Nyanza. According to Cohen and Odhiambo (1991), the fortified settlement of gunda bur was replaced gradually by a dispersed but co-operative network of homesteads. These scattered settlements remained connected by men's and women's relations of both kinship and friendship. This settlement form had begun continued to evolve prior to the advent of the Europeans in East Africa but foreigners poorly identified it as "shifting cultivation."<sup>2</sup> This assessment also ignored the dynamic nature of Luo settlement, the crucial sense of the ancestral gunda bur and the elaborate linkages of kinship and friendship among the Luo.

The decline in livestock numbers that led to changes in Luo settlement was an outcome of warfare and theft by other ethnic groups who also inhabited the region but also, due to recurrent livestock epidemics. Over time, marriage and trade with neighbouring Bantu ethnic groups also introduced the Luo to new agricultural techniques such as semi-annual planting and diversified crop production (Bookman, 1973). Women, as wives and traders, were therefore responsible for a transfer of knowledge

which induced change in agricultural land-use (Ocholla-Ayayo, 1976).

Consequently, the relationship between gender and land use among the Luo changed significantly. In the earliest Luo settlements along the lake, it is believed that men were responsible for fishing and cattle-herding, and, aside from planting, which was done by women and children, men were also largely responsible for most agricultural labour (Bookman, 1973). Although there are limited historical references available on the subject, this analysis warrants considerable skepticism as it is based on research primarily by men (mainly European missionaries) involving men with minimal reference to women's role in pastoralism, agriculture or pisciculture (Bookman, 1973). It is, however, interesting to note that Luo men were possibly more active in pre-colonial agriculture than they were during and following colonialism.

To summarize the the most significant transitions in pre-colonial gender relations and land-use among it is apparent that: 1) Luo men spent less time fishing (especially those who settled further away from Nyanza) and herding animals (due to reduced cattle herd size) and therefore, more time in the homesteads and year-round agricultural production; 2) new food crops were bi-seasonal and labour intensive and Luo women were involved in agricultural activities to meet increased labour demands and not necessarily to

supplement or supplant men's work; 3) that even prior to the arrival of Europeans, Luo women were active in the transfer of agricultural knowledge as well as the marketing of surplus.

### Siaya During Colonialism

Prior to 1895, when the southwestern region of Kenya, known as Kavirondo, was declared a British protectorate there was limited infiltration of the British and specifically, the Imperial British East African Company into the area. Yet, by the beginning of the twentieth century, European control over Western Kenya was entrenched. This presence was not physical for apart from missionaries who located their mission in the Siaya region (particularly in nearby Maseno) and later, Europeans who worked with the Siaya and Kakamega gold mines in the 1930s, there were few Whites who ever acquired land leases and settled in Siaya. Instead, European control over the Siaya area concerned not land but labour.

The first task of the Kavirondo administration was to designate boundaries among and between the various ethnic groups of the area and establish the Hut Tax Regulations in 1900 (Odinga, 1967). Disguised as a plan to create "self-sufficiency," taxation forced Kenyans into the cash economy by selling cattle, crops or their labour in order to pay the tax. The designation of boundaries



around the ethnic groups in Nyanza as well as around "households" ignored relationships of kinship and friendship between Luo settlements and served only to reinforce British control over the region and specifically, facilitate taxation. It is in this early period of British administration that the Siaya landscape began to be interpreted as "individual farms" and "communal land", categories that ignored evolving patterns of group settlement and common property among the Luo (Cohen and Odhiambo, 1991).

It was labour, not land, as in other areas of Kenya (such as the Central Highlands), which was the desirable and extractable resource of Kavirondo (Cohen and Odhiambo, 1991). When voluntary labour declined, contracts for compulsory labour were ordered and the mlango (colonially appointed chiefs and assistant chiefs) became labour recruiters under the Village Headman Ordinance of 1907 (Bookman, 1973). In Nyanza, women and children were also recruited as labourers in plantations and European households in other areas of the country while those who remained on the farm shouldered the burden of taxation and support for their remaining family (Odinga, 1967).

In 1915, the East African Protectorate was officially designated a Crown Colony of Britain. Labour from Siaya continued to be drained for colonial-run plantations, mining and construction. The British also extorted tens of thousands of men from Siaya to serve as carriers and soldiers in the First World War (Ogot, 1963). At the

end of WWI, White settlers had land leases extended from 99 to 999 years, an array of subsidies were offered and a cheap "labour pool" guaranteed through the kipande identification system and reductions in minimum wage (Ogot, 1963). In effect, Kenya had become divided into export-producing zones (mainly the area known as the White Highlands) and "underdeveloped" reservoirs of migrant labour. Siaya was irrevocably stamped with the latter image.

Although there were few White settlers in Siaya, the region was affected by macro-level colonial policy concerning agriculture and other environmental issues. For instance, European interference in territorial warfare involving the Luo and neighbouring ethnic groups, as well as the demarcation of tribal boundaries, impeded further Luo expansion and transition in settlement and land use. As a result, increased human and livestock population intensified pressure on what became a finite area. Based on colonial correspondence I reviewed at the National Archives, I first found references to evidence of soil infertility and widespread soil erosion in Siaya in the early 1920s. This degradation was attributed to uninterrupted cultivation and deforestation due to increasing demands for fuel, wood for construction, grazing and land clearance. During the period 1920 to 1940, the first efforts to promote tree planting were recorded and the first concerns of land shortages in Siaya were documented (Odinga, 1967).

In the face of increasing land shortage and continued taxation,

many more Luo men (and to a lesser extent, women) were forced to migrate to work on settler plantations, in unskilled jobs in the mines or in the growing towns of Kisumu and Nairobi. Not paying taxes could mean eviction, imprisonment and unpaid labour for the government (Ogot, 1963). Usually, the limited funds that remained after payment of taxes and support for family members living outside Siaya were insufficient for farm investment (Bookman, 1973). The insecurity and shortage of land, loss of male labour and absence of capital meant the burden of most work -- especially many activities previously done by men -- was left to women.

Recurrent hunger and chronic malnutrition is a common feature of archival references for the 1920-1940 period (Cohen and Odhiambo, 1991). Ironically, fused with this disaster was the promotion of dongruok, (progress) by the colonial government, religious missions and their schools (Odinga, 1967). Supposedly, one important feature of "progress" was the introduction of kuon ongere or "white man's ugali" (white maize) as both a food and cash crop for the colonial and world markets despite the fact that few Europeans ate white maize as a dietary staple (Cohen and Odhiambo, 1991). Despite its inferior nutritional and ecological value, particularly compared to the Luo staples of wimbi or finger-millet and red sorghum, white maize has since been entrenched in the local diet, economy and environment of Siaya.<sup>3</sup>

In the early 1930s, the British administration first began to

elite, government or external agencies (Belgian Survival Fund, 1984).

The persistence of colonial agricultural policy, land law, out-migration and district poverty has meant that the post-independence era for women in Siaya may have been nationally but not personally liberating. While men have had a significant leadership role in the district, women have not. However, as a historical perspective on gender, environment and development in Siaya reveals, women have not been passive spectators of the "development" process in Siaya. Women, even from the early stages of colonialism, have expressed their individual and group resistance to policies and activities that have counteracted their goals for themselves and their families. Surely, the challenge for land-use technologies such as agroforestry and existing development activities including the CARE-Siaya Agroforestry Extension Project will be to reconsider their role cause, symptom and solution of gender-based inequality.

#### The CARE-Siaya Agroforestry Extension Project (AEP)

The CARE-Kenya Agroforestry Extension Project operates in two districts in Western Kenya. It was first launched in Siaya District in 1983 and in 1986 the project was extended to South Nyanza District in the Southwestern region off Kenya. In November 1989, the project estimated that it assisted 2600 farm households

promote the cultivation of cotton in the Nyanza lowlands and coffee in the Siaya highlands as cash crops for sale to the colonial and world market. However, pressure from White settlers who opposed competition from African producers increased the reluctance of the government to make the necessary investments in soil erosion control, agricultural amendments, road construction and marketing infrastructure (Freund, 1984). For these reasons and also, because non-edible crops such as cotton and coffee are labour intensive and incompatible with livestock husbandry, Siaya farmers (mainly women) largely rejected the colonial government's expectations (Bookman, 1973).

Resistance to colonialism in Kenya, fermented during the Harry Thuku riots (1922), reached new heights during the Mau Mau rising (1952-55). Through propaganda and the transfer of Kikuyu property and employment in Nairobi to the Luo, the colonial government capitalized on the emerging ethnic struggle between the Luo and the Kikuyu (Odinga, 1967). In many respects, the relative failure of all ethnic groups in Kenya to unite during the Mau Mau, but especially the Luo and the Kikuyu, was a great weakness of the uprising and deepened the persistent ethnic divide between these two ethnic groups (Freund, 1984). Nonetheless, rural impoverishment, loss of land and all other matters of racism were central issues in the Mau Mau rebellion, issues to which every African in Kenya could relate (Odinga, 1967). Realities of the "emergency" in Kenya and three years of severe brutality to control

the Mau Mau shifted British policy towards "reform;" in 1954, the crucial element of government reform, the Swynnerton Plan, was launched.

The Swynnerton Plan was a diverse package of policies involving land consolidation, registration and agricultural policy directed to the creation of small-scale farming "enterprises" which would encourage the growth of an African middle-class supportive of the colonial administration. The plan did not seek to return African land, which had been seized by the Crown Colony and allocated to White settlers, but rather the plan proposed mass campaigns directed at land consolidation and subsequently, registration of individual ownership within reserve areas (Okoth-Ogendo, 1991). As Odinga (1967:107) relates, "the government put its new policies into effect as it had always done in the past, imposing them on the people without consultation." Enforced by its appointed network of chiefs and mlango (elders), the colonial government upheld that land titles would provide economic incentive to African farmers and make them eligible for farm credit programs. However, through the process of land registration African land merely became entrenched more firmly in the cash economy and the jurisdiction of English property law (Okoth-Ogendo, 1991). Over thirty years later, these implications are at the root of contemporary land disputes, environmental degradation and gender relations.

In effect, the consolidation and registration of landholdings

prescribed by the Swynnerton Plan and later, continued by the independent Government of Kenya, created both a landed and landless class of rural people, although the plan saw this as an inevitable and not undesirable result (Okoth-Ogendo, 1991). Using the modernization rhetoric of the era, the conventional belief was that displaced rural people would migrate to the urban "growth centres" for employment. This simplistic view failed to recognize the relationships between Kenyans and their rural homes. It underestimated the past record of out-migration in areas such as Siaya and it ignored the influence of social, political and economic structures that reinforced gender, class and race inequality which would inevitably marginalize Africans in the urban sector.

One of the greatest impacts of the the plan was that it rationalized that landholdings did not need to be expanded through land redistribution, but could be made more "efficient" if African farmers secured their land tenure and intensified agricultural production by adapting government-distributed technology (Okoth-Ogendo, 1991). Yet security of land tenure under the Swynnerton Plan inevitably translated as insecurity for African women.

Through its transfer of English property law to Kenya, the Swynnerton Plan required units of land to undergo a three stage process of adjudication (survey), possible consolidation where land is considered by officials to be too small to be economically

productive and finally, registration -- the documentation and payment of title deed and its ensuant rights (Wangala, 1990). In this process, which in many areas of Kenya today is still incomplete and highly conflictual, lineage land becomes "family farms." Land becomes a quantifiable, moveable commodity ultimately "guaranteed" or accurately recorded by the government and statutory legal system and therefore, independent of and dominant over customary law (Wangala, 1990).

Although theoretically land may be considered a "family" asset, it is typically registered in the names of the "male head of household" (Wangala, 1990). Not only did the Swynnerton Plan and its policy implications ignore women's land tenure rights, it also categorized Kenyan women within an "inferior" domestic sphere, ignoring their crucial involvement in agriculture as well as marketing, livestock and household and community leadership. Women's marginalization in the process of land registration has further prevented women from accessing other immediate and strategic benefits without the permission and involvement of their husbands; for instance, women without title to land may not qualify for government incentive and loan programs. (Davison, 1988).

Certainly, all poor people in Siaya have been exploited and suffered from the commoditization of the natural environment, but women of Siaya are further oppressed by the inherent sexism of colonial and capitalist post-colonial structures. In Siaya, during



the colonial era of 1895 to 1962, it was primarily women's labour that subsidized the production of subsistence and export crops in addition to the reproduction of the labour force on which the colonial government heavily depended. As the majority of full-time rural residents and labourers, women's own knowledge and health, and the well-being of their families, were undermined as a result of adverse changes to diet and environmental integrity induced by the commoditization and westernization of the environment. Finally, women's status, derived from their lineage and community membership, was eliminated by the imposition of male-dominated English property law. Certainly, these negative trends in Siaya's colonial experience have provided the backdrop for subsequent evidence of how "development" alienated men and women from each other as well as from the source of their identity and substance -- the environment.

### **Siaya Since Independence**

Life in contemporary Siaya is a product of its colonial experience as well as Kenya's development trends since Independence in 1963. One writer describes post-colonial Kenyan development strategy as "unfettered capitalism," entailing private and public sector accumulation primarily in agriculture and to a lesser extent, in industry and commerce, constrained only by market forces and absorbing only a fraction of the labour force (Hunt, 1984:2).

Clearly, there is a wide range of material on the subject of Kenyan development since Independence yet one basic consideration recurs: Why did many colonialist structures continue in post-Independence Kenya?<sup>4</sup> As Okoth-Ogendo (1991) suggests, both before and after Independence, there was no organized and convincing opposition to "unfettered capitalism." Another argument, typically used by the Kenyatta government and the ruling party KANU, was that the dismantling of colonial institutions and policies, particularly those related to agriculture, would entail greater political, social and economic costs than benefits (Freund, 1984). Furthermore, a politically and economically powerful African elite which had developed even prior to Independence had more to gain from maintaining the status quo and remoulding it to their purposes than dismantling the capitalist system completely (Freund, 1984, Leys, 1975). As Okoth-Ogendo (1991) indicates:

The emergence of this elite can be explored in terms of many different trends in colonial policy. The conditions of wage labour and its consequences for the African economy, the creation of authority structures that were completely independent of indigenous channels of accountability and therefore amenable to colonial manipulation, the system of competitive education and selective training and the rise of a dependent African bureaucracy are some of the more important considerations (Okoth-Ogendo, 1991:163).

Thus, following independence in 1963, there was no drastic restructuring of the Kenyan economy. Although major government institutions were "Africanized" many colonial policies persisted, particularly those based on agricultural production and legal structures dependent on English property law (Okoth-Ogendo, 1991; Staudt, 1975).

Since Independence, Kenya has experienced the gamut of development dilemmas which many Third World countries have faced.<sup>5</sup> Siaya District has not been exempt from any of these economic, political, social and environmental conditions. As one of forty-five administrative districts in Kenya, Siaya's approximately 80,000 smallholder farm households are among the poorest in the country (Central Bureau of Statistics, 1991). Other fairly current indicators of poverty in Siaya also reveal the key problems of the district. For instance, Siaya's infant mortality rate, at 211 deaths (children under two years) per thousand births is ranked as third highest in Kenya (Olenja, 1989). Whereas high rates of malnutrition accompany high rankings of infant mortality, in Siaya these factors are not necessarily correlated (Hafkin and Bay, 1976).

Unlike other areas of Kenya which experience high rates of malnutrition due to the competition between cash crops and food crops, farmers in Siaya have tended to direct farm production to food crops which may be used for consumption or locally marketed. As I confirm in this study, women tend to dominate the labour and control of income from food production and sale which translates into lower rates of malnutrition because in their "production of life" women link productive and reproductive activities and requirements of the household (Mies, 1986). Exceptions to this rule may however, be found in sugarcane producing areas of the district bordering Kakamega District, where this cash crop has

competed for limited land area and been controlled mainly by men who may be resident or non-residents. Accordingly, malnutrition rates may be higher in these areas (Hafkin and Bay, 1976; Kennedy and Cogill, 1988).

In my view, high infant mortality rates in Siaya District may be more closely connected to deficits in basic needs other than food such as water. In Siaya District, the quality and quantity of potable water are key issues in household food security. Two main rivers cross the district, the Yala and the Nzoia, there is over 100 km of lakeshore and Yala Swamp covers a vast area of the southwestern end of the district, but still over half of the district is considered semi-arid. In the higher potential areas, bimodal precipitation falls anytime in March through to May (long rains) and the end of August to October (short rains). The annual rainfall of the northern part of the District decreases from 1600-2000 mm to 800 mm near the shores of Lake Nyanza. Aside from these general figures, however, not only is precipitation highly variable but the availability and quality of groundwater is often reduced by contamination, restrictive tenure rights and distance between the source and usepoint.

In most ecosystems, problems associated with water quality and quantity are related to problems of deforestation and soil erosion. Trees and forests and the soils that support them are a natural system of water purification and storage. Aside from their

ecological benefits, trees provide a vast range of household and market products. Yet in Siaya District, there are no gazetted, natural forests and few remnants of tropical rainforest exist although such forest once characterized the northeast, close to the border of Kakamega. Whereas trees dot the landscape of Siaya District in most areas, forest biodiversity is low (Jaetzold and Schmidt, 1983). Drier areas are now characterized by acacia scrubland while many desirable indigenous species in higher potential areas are rare or non-existent. Inevitably, the loss of tree cover and correspondingly, soil organic matter, has had tremendous repercussions for soil erosion, fertility and moisture retention (District Forestry Officer, 1991).

Thus, the potential for agroforestry in Siaya District is significant. Agroforestry emphasizes the role of trees in agricultural, livestock and market production as well as household consumption. Various agricultural and silvicultural techniques are associated with agroforestry.

Prior to 1986, and the launch of the CARE-Kenya AEP in Siaya District, there were few external initiatives to plant trees on farmland. Earlier colonial forestry programs in Kenya ignored Siaya District or were commercially based (District Forestry Officer, 1991). NGOs, including religious missions, reportedly have played a significant role in addressing the need for farm-based reforestation. Since the early 1980s, the Government of

Kenya has shown a greater commitment to the establishment of tree nurseries, research and extension related to farm forestry but its capacity to provide the necessary services is limited and declining due to rampant underfunding, mismanagement of available resources and economic and political problems in the country as a whole.

Many of the above socio-economic and ecological issues have served as the basis for district-level development activities carried out by both governmental and non-governmental (NGO) agencies. Although District Development Committees (DDCs) existed in Kenya before independence, development planning was largely instigated by the central government. In 1983, under the District Focus Strategy, the DDCs were strengthened and given the mandate to act as the main agencies of decentralized development in Kenya. The head of the DDC is the official head of the district, the District Commissioner. District Divisional Officers, each representing a sectoral responsibility such as agriculture, forestry, social services etc., are also members of the DDC. NGOs may also serve as members of the DDC (for example, representatives of CARE-Siaya attend the DDC). Throughout Kenya, each DDC is responsible for design and implementation of a District Development Plan based on the expressed needs of the sub-locational committees. The latter is the lowest level of administration in the district and its boundaries often coincide with village or gweng (lineage) territory. The typical form of communication with communities is through locational and sub-locational baraza or community meetings.

Both men and women attend and participate in baraza although they are typically dominated by older men of the area. Women's and farmers' group leaders also are involved in barazas although in Siaya, the colonial administration had for some time encouraged women to hold their own barazas which women joined but later abandoned (Bookman, 1973; Belgian Survival Fund, 1984). In retrospect, the decline of these parallel meetings is most likely attributed to their manipulation by government interests and women's lack of influence over male-dominated socio-cultural, economic and political structures.

Admittedly, the theory of decentralized development planning, as represented by District Focus, may not necessarily inspire more effective development. The extent to which the DDC reflects community opinion or facilitates equitable community participation in Siaya is not certain (Belgian Survival Fund, 1984). Whereas women represent the majority of the inhabitants of Siaya District they are under-represented on the DDC at all levels. Through the course and experience of this study, it became apparent that the extent to which individual women or women's groups may interact with the DDC (at any level) often tends to reflect both the confidence of the lobbyist and the sensitivity of the DDC leadership. Even at a national level, women's political representation faces similar issues (Rhodie, 1989). But in Siaya, these issues are rooted in history as local leadership has repeatedly been manipulated by the interests of certain local

in the two districts (Scherr and Alitsi, 1990).

The AEP is the longest operating, non-governmental agroforestry development project in Sub-Saharan Africa. The project was originally supported by CARE-USA with contributions from the U.S. Agency for International Development but since 1986, the project has been almost entirely funded by bilateral assistance from the Canadian International Development Agency and CARE-Canada.

The CARE-Kenya AEP is well-known for its emphasis on rural extension. The project was originally based on a methodology known as "Diagnosis and Design" (D&D), an approach promoted in the mid-1980s by the International Council for Research on Agroforestry (ICRAF), a member agency of the Consultative Group in Agricultural Research (CGIAR), based in Nairobi. In each of the five divisions of Siaya District, where I concentrated this study, there is one CARE field officer and at least five CARE extension workers. I estimated that the ratio of extension workers to farmers involved in the project is approximately 1:75, one of the highest ratios in any comparative development project in Kenya. The extension focus of the AEP on assistance to individual farm households is relatively new. Prior to 1991, the AEP concentrated its activities on farmers' groups, public schools and demonstration farmers. Due to its efforts to "encourage greater sustainability" the project now focuses on the needs of individual farm households (CARE, 1990).



The CARE-Kenya AEP also concentrates significant resources on field staff training and support for agroforestry demonstration farmers. In addition, the AEP has a significant research component. The project is associated with the Agroforestry Research Networks for Africa (AFRENA) which is based in Maseno in Western Kenya and is financially and technically supported by ICRAF. AFRENA scientists are collaborating with the AEP and local government foresters on a pilot project that will conduct on-farm monitoring of agroforestry. Specifically, this effort involves the quantification of economic and biological inputs and outputs in farm-level agroforestry systems. Presently, it does not involve a component of social analysis.

One activity which is beginning to reveal a greater quantity and quality of socio-economic information about agroforestry in Siaya District is a pilot project within the AEP. The Participatory Monitoring and Evaluation (PM&E) exercise is directed to testing participatory methodologies of project needs assessment, monitoring and evaluation with farmers. However, the PM&E has not yet carried out a detailed analysis of the information and process which it is generating. Neither has this exercise specifically addressed issues involving gender relations and agroforestry at the level of the farm household.

The key objective of the CARE-Kenya AEP is to increase the socio-economic well-being of poorer, small-holder farmers in Western

Kenya through the promotion of agroforestry. To reach this goal, the project is involved in all aspects of the agroforestry system from the production of tree seedlings to the extension of various agroforestry interventions such as alley or row cropping for fodder, fuelwood or mulch; the planting of trees as borders around fields or the compound for both protection from wind and soil erosion; fruit orchards and the planting trees within the compound area for shade and aesthetics; woodlots for timber or fuelwood and live fences for protection of fields from grazing livestock.

While the AEP has promoted these various agroforestry interventions among individual and groups of farmers and schools, there has been no detailed analysis in the project which indicates the extent to which the AEP has improved the socio-economic well-being of the poor, small-scale farmers which it has sought to assist. Moreover, while it is estimated that 65% of the beneficiaries in the AEP are women there is no clear sense of the "benefits" of the AEP for women (CARE, 1990). In a general review of various agroforestry development projects, Challinor and Frondorf (1991) have indicated what they believe to be the "benefits" of the AEP for women farmers:

"A major impact of the AEP was in redefining the role of women, who traditionally had no tenure or ownership rights. CARE's decision to put women in charge of seedling production more broadly empowered women. Though men retain de jure control of the trees, women now enjoy more rights to seedlings, tree planting and tree products as a result of AEP." (Challinor and Frondorf, 1991:2)

Although these authors have used the term "empowerment" they do not

explain the manner in which women have improved their lives by having "more rights" to tree seedlings, planting and products. The valuable questions which both Challinor and Frondorf (1991) and the AEP leave unanswered relate not to women but to gender relations and agroforestry. For instance, how has the project addressed the relationship between improved tree tenure rights for women and gender inequality in land tenure? Has the project succeeded in ensuring that women will enjoy the benefits to agroforestry both in the short- and long-term? How has agroforestry influenced gender inequalities in on- and off-farm labour, decision-making and control of the full range of benefits from agroforestry?

These were the types of questions which could not be answered when I first began to examine the CARE-Kenya Agroforestry Project in 1987 as an undergraduate student. They were also the questions which motivated this study and steered the next three chapters.

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#### NOTES

1. In using the present day designation of "Siaya" I am collectively referring to the Luo sub-groups, usually based on regional, kinship affiliation, such as the Asembo, Alego, Seme, Uyoma, Ugenya and Gem. These ethnic sub-groups often coincide with the administrative boundaries of sub-divisions in Siaya District.

2. Actually considered a form of agroforestry, shifting cultivation refers to a method of clearing or cutting the forest or shrubs, burning the vegetation and planting crops in the fertile ash between the stumps and remaining trees. Once soil fertility is reduced, farmers allow the site to regenerate and move to a new site to begin the process again. Shifting cultivation has received mixed reviews as a land-use technique and is highly site specific.
3. Red sorghum has a higher protein and iron content than most grains. It is reportedly used for medicine. It is both more drought -- and waterlog -- resistant than other crops (particularly good for clay-based soils which predominate in Siaya). Finger millet is a very labour-intensive crop but it shares the same nutritional aspects as red sorghum. However, it has the widest range of micro-nutrients. It grows like a fine grass and therefore protects the soil from run-off erosion and the stalks can be used as livestock fodder. White maize is neither drought or waterlog resistant. It is high in simple carbohydrates with a low nutritional value in micro-nutrients, iron and protein. Cultivation in rows may exacerbate soil erosion.
4. See for example, Leys (1975); Leo (1984) and Kitching (1980).
5. For a discussion of these trends see for example, Bradshaw (1990), Bratton (1990) and Hutchful (1990).

## CHAPTER 4

## EXTERNAL POWER RELATIONS

## LAND TENURE AND TREE TENURE

In the 1990s, land tenure is a critical development and environmental issue in Siaya District as in many other areas of Kenya (Okoth-Ogendo, 1985). The increasing rate of landlessness due to socioeconomic and political marginalization of the poor and increased population pressure is both cause and symptom of this crisis (Hunt, 1984; Anderson and Grove, 1987). For many rural people and particularly women -- who are most peripheral to male-dominated legal systems in Kenya while at the same time, most dependent on the land for their production of life -- the implications of the land crisis are very real (Mbeo and Ooko-Ombaka, 1989; Hahn, 1984). Thus, the convergence of land tenure and gender relations involves a highly charged debate because power is integral to both variables (see Chapter 1). As Ooki-Ombaka (1989) has written,

If politics is the struggle for power to control policy formation, resource distribution, and to chart the paths of nations, law is its handmaiden. (Ooki-Ombaka, 1989: )

In this study, I consider 'the law' as a key feature of what I refer to as the external structuring of power relations between women and men. Legal structures involve socio-cultural, economic and political forces beyond the control of individual men and women which inevitably affect the relations between them. Yet, just as legal systems create and perpetuate unequal gender relations, they

can also be transformed to ensure gender equality.

Applying this idea to an examination of tenure in Siaya District is especially interesting, albeit complex, because two distinct legal systems generate, apply and enforce control over the two key resources in agroforestry -- land and trees. The term "statutory law" is used to refer to the essentially English civil law which is governed by the Kenyan judiciary while customary law in Siaya pertains to uncodified, Luo law regulated through the councils of elders. The actual operation of statutory or customary law depends on the parties involved and the issue at stake. For instance, in burial and inheritance issues involving a married woman, customary law may be followed (Wangala, 1990; Stamp, 1990). Conversely, once land has been adjudicated, the majority of land transactions are regulated by statute (Muigai, 1989; Wangala, 1990; District Lands Officer, 1991).

In Kenya, the relationship between statutory and customary law can be contradictory, erratic and confusing for men and especially, women, who may not be certain of their rights under either legal system (Wangala, 1990; Ooko-Ombaka, 1989). Furthermore, the law and the practise of the law are two different matters because social attitudes and perceptions shape the way in which the law is interpreted and used on a daily basis. This discrepancy was evident during our discussions with AEP farmers and interviews with AEP extension staff. For instance, in present day Siaya District,

it is often remarked that men control land by virtue of their ownership status under both modern and traditional law. However, this justification is only partially accurate. Certainly in Luo customary law, men achieve the status of landowners through a patrilineal system of inheritance, a precept enforced by the rationale of exogamous marriage. As one male farmer explained in the discussions,

Among the Luo people it is women who must leave their home to become part of their husband's home. Women never have land registered in their names because she is a visitor -- only the man's name is written...a woman comes to the home as an adult and finds all she needs, but she owns nothing.

Yet as Luo historiography indicates, in pre-colonial customary law the absolute individual "ownership" of land by a male did not exist. Land was a common property resource which was owned by no one person and accessed by all (Bookman, 1973; Ocholla-Ayayo, 1976). Thus, the tendency to refer to the individual male as the "traditional owner" of land discloses the extent to which customary law can be "recreated" to suit the purposes of male hegemony (Stamp, 1990). Likewise, there are some provisions for women's rights to property under statutory law. For instance, under the Married Women's Property Act, women can acquire, hold or dispose of any property. However, in the dissolution of the marriage women may need to prove that they contributed financially to the purchase of property or its significant improvement in order to receive their full share of property rights; such proof may not necessarily include indirect contributions such as labour (Muigai, 1989).

roups our research team was conscious that questions about tenure were extremely important. The system operates at two main levels: first, as a Luo and Canadian or a Luo from another area of the country would be considered government "informants." More importantly, we realized the political implications of legal rights because men were sometimes reluctant to raise such issues in front of their wives, or women were reluctant to do so without a neighbour present or her husband's approval. One informant remarked, "a woman can be sent away the way you can with such matters."

In order to avoid intimidation, we avoided using intimidating methods such as survey, registration or title deed as much as possible. In some cases, this simply could not be done as the concepts could not be translated into Dholuo. In order to answer questions about specific dates of land acquisition, we found that farmers could not answer to diffused questions such as, "Do you remember when the government sent people to measure (survey) the land around here went to the town of Siaya to register the land (referring to the title deed)?"

Despite a reluctance to discuss land and legal matters, it was still evident that farmers lacked basic procedures in statutory land law and



the relationship between statutory and customary land law, and that this was particularly common among female farmers. For instance, we heard comments such as, "I am waiting for the officials to bring us the title deed," or, "men cannot use the deed to take away the land because I am his first wife."

While male bias in customary and statutory land law is generally recognized, its evidence was clear among the Siaya households represented in this study. For example, 87 per cent of the farms were registered under an individual male name. There were no women who held an individual title to land. In only 5 per cent of the cases, women reported that they technically "owned" land, albeit in a joint tenancy or group-interest title. In all of these cases, the women were widows and the title was shared with their sons. In polygamous homes, women whose names were registered on the title did not hold land communally as wives of one household but shared a title as an individual mother with their respective son(s).

Evidently, while women generally do not possess ownership rights to land, they do possess access or usufructory rights. This generalization persisted among the AEP farmers regardless of whether or not the land in question was originally inherited or purchased. Among the AEP farmers sampled, 95 per cent of the land they live on and cultivate is inherited, patrilineal property. Only 5 per cent of these farmers, all of whom were considered to have above-average wealth, indicated that they lived on or

cultivated purchased land, which ranged from a few kilometres to tens of kilometres away from their ancestral home. In all these cases, the new property was registered in a male name; when questioned why, male and female farmers repeated that it was "tradition" for a man to own the land. The distinction between inherited and purchased land is interesting because it suggests three premises: 1) customary principles associated with lineage land can also be applied to new, non-ancestral property in order to rationalize male domination in land ownership; 2) increased economic status of farmers may not necessarily improve women's access to joint or individual land titles; and, 3) issues of land ownership and control are strategically important to male hegemony.

Although in this study I did not find that the origin of land improved women's position vis à vis land tenure, it is important to realize that this situation may change according to the individual woman. In other words, women's usufructory rights to land are not permanent, but vary according to changes in her age and marital status. A younger wife of a polygamous household who has many children typically is allocated a larger area to cultivate. In this case, women's access to productive resources such as land may be based on her reproduction. Likewise, although I found that men held the preponderance of decision-making authority over both the purchase of new land and allocation of land to children, it was relatively more common to find that older women were involved in the decision-making concerning the allocation of land to younger

family members. For instance, a mother's decision regarding the transfer of the fields she cultivated to her sons and their wives is well respected. Conversely, only one in fifty-five households reported a woman as a significant decision-maker regarding the purchase of new land; in this particular case, the woman was a farmers' group leader and possessed a partial secondary-school education.

Whereas women's access to information on customary law -- through local communication channels or experiences -- may be greater, an awareness of women's legal rights under statutory law is of equal importance because statutory law now governs the majority of land transactions in Siaya (District Lands Officer, 1991). An awareness of statutory law also opens a window of opportunity for women to discuss land issues in a less threatening manner. Land had been registered on all the farms visited, but over 70 per cent of the respondents, three-quarters of whom were women, did not have a title deed or know if they had one. Among the female farmers who spoke candidly about their efforts or plans to obtain land title, I noted that they had at least a general understanding of land transactions and some had very detailed information and anecdotes. While the age of these well-informed women varied, they tended to be active members in their communities through leadership in church or farmers' groups as well as cultural and/or economic activities as healers, midwives, teachers and traders. In some cases, the influence of educated sons or daughters-in-law also contributed to

their mothers' awareness of land tenure in the local area.

Why then did almost three-quarters of the AEP farmers involved in the study have difficulty providing specific information on land titles? Likewise, it is estimated that since 1987, over 120,000 title deeds have not been collected from the District Lands Office (District Lands Office, 1991). Clearly, aside from a lack of awareness about the title deed process, any effort to modify or simply obtain documents involves significant costs in time and money for farmers. Such costs were listed as a major reason for the delay in obtaining the deed. While the minimum cost can be approximately 380 K/sh, the cost can be significantly higher if the title is contested or reassessed. Even if women have access to such funds or are confident of their rights, they may not initiate the legal process because of the time and additional expense for travelling to the district headquarters to negotiate transactions. One widow indicated that she had heard it took many trips to Siaya to change the title, and was waiting for her son to return from Kisumu to make such arrangements.

Male bias and women's disproportionate lack of information, funds and time to pursue their land tenure rights have obvious implications for their tenure of other natural resources such as trees and subsequently, for their involvement in land use such as agroforestry. Certainly, it can be expected that if women have only semi-permanent access to the land on which they labour, the

foundation on which their production of life rests is equally insecure (Mies, 1988). Trees are essential and multi-purpose in women's production of life but in Siaya District, under both customary and statutory law, planted trees are recognized as an indicator of land ownership. Accordingly, men have often controlled the planting and management of trees even though most species have semi-permanent functions exploited by women.

Gender-determined rights to trees and tree products are diverse and specific both to the identity of the individual as well as the type of land on which the tree grows and the tree species and product concerned (Fortmann, 1987). In general, however, we found that both male and female farmers referred to a male as the "owner" of the on-farm trees, and men had a wider range of ownership rights to marketable trees and tree products than women. Men controlled the rights to plant and permanently dispose of trees by cutting, lending or selling. Although AEP women farmers rarely referred to themselves as "owners" of trees, women could exercise rights of disposal over specific species. For example, women in Siaya reported regularly harvesting Sesbania sesban, a widespread indigenous, pioneer species which grows randomly on the perimeter of fields or along roadsides. Male and female farmers in Siaya, as in other areas of Western Kenya, do not consider Sesbania a "real" tree but a shrub (Englehard, Bradley and Shuma, 1986). More accurately, such species have little if any marketable value (Scherr and Alitsi, 1991).

to men's general ownership rights to trees did not appear apparent in this study. For instance, four widows (three were first wives) reported that they could control the sale of on-farm trees, planted by their deceased husbands for poles and timber. They had not yet done so because the trees were "not ready for sale" or "I wanted to look at them first." I noted, however, that the vast majority of these trees were less than an adequate size for poles or timber. I asked the farmers and one woman pointed out the lack of local demand as she remarked "no one is building houses here." Another indicated that she had been told by a neighbor not to cut the trees because the chief would not approve. Two farmers, both of whom live in higher-potential Yala, indicated that the trees could be sold to "middle men" who would come to seek timber and poles for construction and other uses, but only when the farmers required the money for such things as a funeral or school fees. Apparently, the timing of tree sale and tree products surpasses narrow economic guidelines because women farmers balance complex social considerations in their control over the use of trees and tree products. As Chambers (n.d.) notes, trees are a form of contingency savings and security for the rural poor. Building on Chambers' analysis, I would argue that gender relations will define who in the rural area controls the savings and security provided by trees. In some type of circumstances these rights may actually be

exercised.

In Siaya District, as in many other areas of Kenya, women who do not have independent ownership rights over land have still been able to access trees in a variety of contexts (Chavangi et al, 1988). In the pre-colonial and early colonial period, both male and female farmers in Siaya possessed use rights to common land. Such areas of land could be used for activities such as gathering woodfuel and grazing but this access was not without its limits. During an extensive life history with an elder in Ukwala-Ugunja Division, the rights of local inhabitants to the embho were explained to the research assistants:

Embho was a spiritual forest set apart from the village. The trees were left alone and no one went there. It consisted of big trees and even if the trees fell no one was supposed to pick up or use the trees -- they just had to rot.... There was communal land and people didn't own land on their own or in plots so the embho was just situated somewhere where all rituals, cleansing ceremonies and sacrifices would be conducted. People who went to the embho were old people like jadongo who were rainmakers. Some selected people would go to collect trees from the embho...they would go like a saga (work party) to collect rain trees or trees for carpentry work. What was forbidden of the embho was going there anytime for anything and cutting trees. The embho was also where those people who died from dhoho were buried because it was the sacred place and dhoho was a big disease. Twins sometimes were left in the embho to avoid chira (bad luck). One could pass near the embho or cultivate close to it but not go further and interfere with it...snakes and hyenas stayed in the embho and children were made to fear it.

According to district officials, since the 1960s and land privatization, there are no longer areas of land or forests which rural people can freely access (District Lands Officer, 1991;

District Forestry Officer, 1991). Thus, common land is now reduced to "public land" which includes areas along roadsides, ponds and in villages. In Siaya, neither men nor women have the right to dispose of trees that grow along main or rural access roads, but such trees are often cut illegally (District Forestry Officer, 1991). Across the district, however, women farmers reported the extensive use of trees along roadsides for woodfuel and grazing although it is usually children who are instructed to herd livestock along such corridors or to carry home woodfuel. Such instruction is certainly due to women's substantial workload and may be influenced by farmers' awareness that public land is not common land. As a male participant in a group discussion acknowledged, "those areas (roadsides) are used by everyone but we heard the government owns those trees." Undoubtedly, the degradation or loss of vegetation in publicly owned spaces narrows the scope of all rural people's rights to trees and tree products, but particularly women's rights.

Technically, the fact that a woman can access trees on land she does not own includes trees in her own household because the land title is generally registered in the name of her husband or son(s). In general, men maintain both ownership and usufructory rights to trees while women mainly possess usufructory rights to trees. These rights include the right to gather, coppice branches for woodfuel or green manure, or harvest produce such as fruit.



cases, we found that women's usufructory rights were exercised on particular areas of the farm. For instance, in border planting or live fences planted around the compound is a practice traditionally managed by males (Odinga, 1991). Fifty-two percent of the farms visited had at least a border around the compound area; in the drier areas of the region however, the fence lines were often sparse due to poor soil conditions and overgrazing. Male members of the family were responsible for the planting of this border in nearly all of the farms visited, and 90 per cent of the farmers who had a border responded that further planting could only be done by the male farmer or older sons, even if they were non-sons. Even in widowed households, border planting could be completed if all sons were able to complete it. Other farmers responded that with the permission of the husband they could hire labor to plant the border but again, obtaining his permission often meant waiting for a letter, message or visit.

Border planting is one of the most important niches for agroforestry in the CARE-Siaya AEP but not one that women have opened up (Scherr and Alitsi, 1991). The 1989 Agroforestry Survey found that among households where the member of the household was a resident male, the number of trees planted in the compound area were 40 per cent higher than average and that "this may reflect the fact that men are in full control of the homestead spaces" (Scherr and Alitsi, 1991:24).

Based on my research, I agree that species selection and planting of trees in the homestead are also largely within the domain of male decision-making and labour. Yet, a finer distinction should be made between different types of agroforestry activities or tree species in the compound. For instance, almost three-quarters of the male and female farmers explained that trees could not be planted or cut anywhere in the compound without the permission of the male, who was sometimes referred to as the "the owner of the compound."

Among those farmers who indicated that men's permission was not required for compound planting or cutting of trees, there was a tendency to be more flexible about the planting of trees than the felling of trees. As well, certain species were safeguarded such as various fruit or mature shade trees and Croton megalocarpus which, in an area of central Siaya, in Boro Division may not be cut because of chira (bad luck).

According to the results of the 1989 Agroforestry Adoption Survey, cropland represented the most significant niche for tree-growing (Scherr and Alitsi, 1991). Among the AEP farms involved in my study, men's labour and decision-making authority over trees in the compound did not always smoothly extrapolate to the control of trees in or around agricultural fields. As Chapter 5 indicates, in most agricultural activities, men's labour is subsidized or replaced by the labour of children, hired help and especially,

women. Many such women exhibit a significant range of decision-making regarding crop selection and agricultural practices. Within this study, female farmers who considered themselves to be active agroforesters indicated that 85 percent of the trees they accessed on the farm were within field spaces. Evidently, the notion of "planting" trees incorporates women physically planting the trees as well as directing child or hired labour. As well, the concept of field must be qualified because it often assumes a space with a designated boundary and agricultural purpose. Certainly, this definition is often true but based on the evidence of our farm sketches and farmers' testimonies, the delineation of agricultural spaces can change even on a seasonal basis as areas are redistributed among wives or sons as their needs and status in the family change. On some farms, the permanency of fields lends itself well to agroforestry interventions such as alley-cropping, but farmers may avoid such interventions because they are conscious of the fact that fields may be redistributed among family members.

Men's significant control over tree-planting and cutting in border and compound spaces can be interpreted as a deliberate effort by men to maintain their land and tree tenure rights over the epicentre of the ancestral home. For Luo men who may no longer be full-time rural residents, this is a particularly significant intention directed at maintaining or strengthening their household position.

One of the most significant contributions of this study is my evidence that nearly half the farmers involved in the study have access to fields and trees in and around these fields, additional to the property on which they reside. In other words, the farm which the agroforestry extension worker is visiting and which is often considered "the agroforestry system" may be only a part of the farmers' access to land and therefore, crops, trees and pasture.

This "other" or "satellite" land is owned, borrowed or rented and it is a crucial source of production for farmers. Therefore it is not correct to refer to this land as "additional" because I believe it is integral to the overall agroforestry system. Gender relations are particularly relevant to why this other land is accessed and by examining farm activities related to this other land, women's strategies for survival are most evident.

Across all divisions, over one-quarter of the farmers involved in the study own other land aside from the farm on which they reside. The title of these other parcels of land was registered consistently in the name of a husband or son. The majority of these land parcels comprised only one plot with an average area of one acre. Throughout the district, these fields were used for food crop cultivation and fallow or grazing land. In Ukwala-Ugunja and Yala divisions, however, this other land was used mainly for the cultivation of sugarcane, which requires start-up capital for the

cost of labour and chemicals but minimum supervision. Overall, trees were not planted on this land because absent farmers could not guarantee that the trees would not be cut by other people. In the few cases that did report practicing agroforestry -- including such interventions as alley-cropping, protection of existing trees and random mixed planting -- in all of these situations members of the extended family lived at least temporarily on the farms.

Land rental is also exercised by 29 per cent of the farmers involved in the study. The rental of land entails an exchange of land for cash and/or a portion of crops produced. No farmers, however, paid rent in only crops; a cash transaction was deemed necessary by both landlords and farmers in order to ensure the rights of cultivation. The timing of payment was often flexible and depended on negotiations between the landlord and lessee. I found that the cash rate of payment varied across the district. In high-potential Ukwala-Ugunja Division, half an acre of land could be rented for 100 K/sh per season. In a semi-arid area of Bondo, grazing land was rented at a mere 15 K/sh per acre. Invariably, trees were not planted on rented land because "they would think you were trying to steal their land." As a result agroforestry (other than protection of natural trees) was not reported on rented land.

The final category of "other land" accessed by AEP farmers involved in the study is borrowed land, which includes land not owned or

paid for with cash or crops. Thirty-four percent of farmers involved in the study utilize land which is loaned by relatives, neighbours or friends. This relationship was identified across Siaya District but it is highly dynamic -- often changing on a season-to-season basis. Over half of the farmers utilized borrowed land for grazing and woodfuel collection. Only with the permission of the landlord could agroforestry interventions be practised on borrowed land. In one such case, alley-cropping had reportedly been implemented and in another, border planting had been arranged the previous season.

In Rarieda Division we identified a system of "borrowing" fields which involves a reciprocal borrowing and lending of land and labour. In Dholuo it is called purwabar or pur wapogi. Pur refers to digging or cultivation and wabar means to share or "let's share." This form of cultivation was explained by farmers as a "cost sharing" between the one party who possessed sufficient land and another individual or group of individuals who contribute labour. Women are the main organizers and labourers of purwabar and together the farmers share all proceeds of the land.

Gender relations shape the ownership and access to this "other land" and the activities being carried out. I believe that this was evident in several ways. First of all, poor women in Siaya have limited access to purchasing or owning land in their own name. Between the sub-categories of other owned, rented or borrowed land,

women's control over other owned land was the least common. Women farmers were, however, instrumental in negotiating borrowed land and rented land. In fact, I suggest that women are responsible for the existence and significance of other borrowed and rented land. According to the discussion groups, women access additional land by drawing on their relations with their extended family and friendships. As well, women use their own cash and crops in order to formalize agreements over additional parcels of land which can be cultivated for both domestic and market production. This point is further supported by the choice of crops produced on borrowed or rented land. Cassava, often referred to by farmers as a "woman's crop," was consistently cultivated. Although cassava has a lower nutritional content than grain crops or other root crops such as potatoes or sweet yams, cassava requires minimal supervision and can be stored in the ground for up to 2 years. Indeed, cassava has earned the reputation of a "hunger crop" because it is sometimes the only food available to farm families during grain shortages or crop failures.

By examining additional or "satellite" areas of land which farmers cultivate, it is apparent that agroforestry is limited to sites where there is some security of land or tree tenure. In this sense, farmers are reluctant to transfer agroforestry interventions which are practiced on their main farms to other owned land because their "savings" in the form of trees cannot be protected. Yet, the identification of these "satellite" fields represents one way in

which women cope with their own immediate and strategic agenda for the "production of life" while circumventing constraints which they experience in customary and statutory land and tree tenure.

In the next chapter, I discuss the relationship between gender and environment at another important level of society, the household. Within the context of the household, the manner in which gender relations at the level of the community and state influence activities on and off the farm is clearly evident in the gender-based relationships between labour, decision-making and control of agroforestry.

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## CHAPTER 5

## EXTERNAL POWER RELATIONS

## LABOUR, DECISION-MAKING AND CONTROL OF BENEFITS

The previous chapter, was focused on men's and women's relative rights and status in Siaya District at the level of the community and state and specifically, on the importance of gender relations in land and tree tenure issues. Power relations at these levels cannot be separated from men's and women's relative power in the household. In the processes of decision-making, negotiation, compromise and concession power relations structure women's and men's interaction with one another and the environment around them. As researchers such as Munteмба (1989), Shiva (1989) and Agarwal (1992) have asserted, unequal and discriminatory power relations appertaining to gender, create and contribute to micro-level environmental degradation as well as reinforce macro-level environmental problems.

An investigation of on- and off-farm labour in selected rural households in Siaya District provided a useful case study of the functional power relations in gender and environment relationships -- particularly, within an area that experiences diverse environmental problems such as deforestation, declining soil productivity, increasing landlessness and out-migration of working age youth and men. Yet, an analysis which focuses solely on labour will only represent a partial understanding of these relationships.

The analysis must also address the manner in which the gender allocation, value and representation of labour may or may not translate into household decision-making and control over income and the environment.

In this study, I have focused specifically on gender-based relationships between labour, decision-making and control of benefits associated with agroforestry. To address these issues, I have divided this chapter into two sections: the first focuses on gender relations, labour and agroforestry. The second section connects labour to decision-making and control of benefits associated with agroforestry.

### **Gender Relations, Labour and Agroforestry**

In this section, I argue that among farmers involved in the CARE-Siaya Agroforestry Extension Project (AEP) the work which men and women perform on and off the farm is differently allocated, unequally valued in both a monetary and psychosociological sense.<sup>1</sup> I also believe that the relationship between gender and labour is either unrecognized or misrepresented by the CARE-Siaya Agroforestry Extension Project. Both of these points influence the the practice of agroforestry and its potential as a sustainable land use system but also, the extent to which agroforestry can contribute to the well-being of all members of a household. I base these arguments on a number of key points which I summarize below

and then proceed to discuss:

- in Siaya, I found a gender allocation of labour in agriculture and farm forestry existed and encompassed most aspects of land management and marketing of produce but it was primarily women's labour which subsidized the practice of agroforestry among AEP farms. Therefore, the gender allocation of labour must be viewed not as interdependent but in this case, dependent on women;

- the contribution made by women's reproductive labour to the practice of agroforestry was unrecognized and unrepresented in the CARE-Siaya AEP as well as in the literature on agroforestry;

- gender-based variations in labour allocation were or were not influenced by other social factors such as age and class; in some cases, gender was a stronger influence over labour than age and/or class;

- in a monetary sense, women's physical labour was valued less than men's; ironically, women's physical labour was perceived as more effective and skilled and therefore, women's labour had an inferior psychosociological value;

- women and men had complementary and conflicting

interpretations of on-farm labour and specifically, the impact of environmental degradation on labour demands;

- cash remittances were not always significant enough to influence the gender allocation of labour in the rural household.

### The Gender Allocation of Labour in Agroforestry: How Women's Labour Subsidizes Agroforestry:

In an analysis of gender and labour issues within the CARE-Siaya Agroforestry Extension Project, the most basic realization was that it was primarily women's labour which subsidized agroforestry. Women's own labour, and women's supervision of hired and child labour constituted the majority of work related to tree, crop and livestock interactions in agroforestry. On this point, I argue that the extent and intensity of women's work in agroforestry refutes Young's (1988b) notion of an interdependent allocation of labour of between women and men (see also, Chapter 1). Instead, I believe that the labour demands of agroforestry are entirely dependent on women. This realization is based on two key points.

- 1) First, a gender allocation of roles existed in many farms in Siaya whereby women had socially defined roles in cultivation such as the tilling of the soil, planting of food crops, weeding and harvesting. However, women fulfilled these

responsibilities but also, some of the labour-intensive socially defined roles of men who were often absent from the farms due to out-migration or involvement in off-farm activities. Activities which had intensified women's workload included substituting men's physical labour in the clearing of land, cultivation and the planting out of trees using their own labour, children's labour and/or hired labour.

The extent of women's labour was also significant. The range of labour activities associated with agroforestry varied from a seasonal minimum number of 12 tasks to a maximum of 27 tasks per farm (see Appendix 3). Across the Siaya District, women identified their involvement in a wider range of work activities associated with agroforestry in Siaya than men. Occasionally men even resigned from answering questions related to farm labour and suggested that we speak to the women who had a better understanding of the variety of required farm work.

As a relevant aside, it is important to point out that significant variation in listing of agroforestry-related tasks existed according to agro-ecological site. In most of the medium -- and low -- potential agro-ecological zones, certain labour activities in agroforestry were usually performed only once a year such as planting, harvesting, weeding. Other activities such as the collection of water and fuelwood were performed year round. In the

higher-potential zones the former tasks must be carried out at least twice annually. Thus, it was precarious to generalize the frequency of this wide range of work activities in agroforestry.<sup>2</sup>

- 2) Second, despite the fact that women were receptive and confident about discussing their methods of farm organization, the extent to which women devoted significant energy and knowledge to the planning of agroforestry production has been largely neglected by the project. Women often had complex calculations of the timing of planting, the preparation and storage of various types of food crop seed as well as the forecasting of crop supply for both family consumption and sale. For instance, one farmer described how she ensured that her seed was kept clean of insects by mixing it with the proper proportion of wood ash and storing it in a clay pot. She also explained that the seed had to be kept in a dry area and shaken regularly so that the moisture in the seed could not cause it to mould or if new ash was used, moisture would cause the seeds to "burn" (ash can be a caustic substance when it is wet).

### The Invisibility of Women's Reproductive Labour in Agroforestry

Women farmers in Siaya not only provide the majority of productive labour in agroforestry but through the birth, maintenance and

teaching of children but they also provide crucial reproductive labour to the agroforestry system. The involvement of children in farm-level agroforestry labour is rarely mentioned in the literature on agroforestry nor is it obvious in most analyses of agroforestry development projects. Children's role in agroforestry tends to focus on school children's participation in agroforestry education activities.

While child labour is often considered "subsidiary" labour, 18.5 per cent of the farms represented in our farmers' discussions, indicated that child labour plays a decisive role in certain tasks which support the agroforestry system. The use of child labour was particularly instrumental in elderly, widowed and monogamous households where labour deficits tended to be higher. Even young children, under the direction of their mothers, are instrumental in labour demanding activities such as water cartage, irrigation of seedlings, weeding, grazing of livestock and among older male children, the planting out of tree seedlings.

Yet, there was an apparent gender bias within the issue of child labour in agroforestry because it was predominantly young female labour which made the most significant contributions to this land-use system. In this respect, girls' labour made a crucial difference in time-consuming tasks such as food preparation, cooking, child care, livestock herding, water and woodfuel collection.

On farms where children made key contributions to the survival and growth of trees and crops, their labour subsidizes the labour of adult women but more so of adult men. As one man explained, "when the children are around, then the man isn't all that busy with work." Girls may relieve their mothers' work burdens but they do so because women must shoulder an imbalance of labour caused by deficits of male labour.

### Gender as the Key Social Factor in Agroforestry Labour

In the course of this study, it became apparent that gender remained a stronger factor of influence on the distribution of labour associated with agroforestry than other social factors such as the age of the farmer, socio-economic class and marital status.

Many of the men involved in this study were permanent residents on their farms; in other words, these men did not leave the farm for any long period of time. Some of the men were also members of farmers' groups affiliated with the Agroforestry Extension Project (AEP) and theoretically, as farmers' group members they would be active agroforesters. However, in general, even among permanently resident men in Siaya who were affiliated with the AEP, it was evident that male labour contributions to on-farm labour were often intermittent. One explanation for this assertion could be that the average age of men involved in the study was significantly high --



52 years of age. As well, many of these men were representative of a higher socio-economic class because some earned a government pension while others were active in the community as elders or church leaders, or busy managing investments such as rental property, oxen ploughs and cattle. The one exception to this case however, was evident among our visits to demonstration farms which received extra extension input from the project in return for serving as a site for farmer training and visits by outsiders. Most of these demonstration farmers were men and in all but one case, their wives and daughters-in-law also contributed significant labour to the demonstration fields.

Even among younger men between 17-35 years old who were involved in this study we did not find that they contributed more labour than women to the agroforestry system. Instead, we found that these men tended to emphasize that they were living at home only until they could find employment or training. Because I represented an apparent link to external employment or education, I was not surprised to find that young men elaborated on the scarcity of opportunities within the district but even in my absence, these remarks still flavoured the discussions. I also noticed that male family members, friends and neighbours, whom younger men considered as role models, all lived in cities such as Kisumu, Nairobi or Mombasa. Rarely did mobility-oriented young men identify their present or future occupation as **full-time** farmers and among those who did, these men's answers were often contradictory because they

were also involved in part-time, off-farm activities such as fishing (Rarieda Division only), trade and/or furniture-making.

Lastly, we detected that men's intermittent farm labour contributions were influenced by their marital status. Men in polygamous unions were typically less active in agroforestry activities than men in monogamous marriages. In the former case, such men explained that if they were too involved in farm labour it could cause nyieko or jealousy among the co-wives because one wife would feel that the husband had worked harder in another wife's field than her own field. Indeed, permanent and temporary male absence was highest among polygamous households involved in the study.

### Inequality and the Value of Women's Labour

The use of hired labour was significant among the AEP farmers involved in this study as 42 per cent of farmers annually employed paid labour. In Siaya, hired labour had two main forms: 1) seasonal labourers (both male and female) who were hired for labour-intensive or equipment-based activities such as weeding, cultivating by jembe (hand-hoe) or ploughing using oxen. Payment was almost always in cash and very rarely with in-kind payment such as food, livestock etc.; and 2) group labour or saga, with male and female group members were usually paid in smaller amounts of cash

and partially, with in-kind payment such as food. The extent to which non-group hired labourers were employed depended primarily on the financial resources available to a farmer but also, on the strength of his or her community connections such as kinship, friendship or religious affiliation.

Payment for non-group hired labourers varied according to the task and geographic area. The latter affected the price of labour because in some areas such as Rarieda and Bondo Division I found that labour demand exceeded labour supply. This situation occurred for a number of reasons. Most importantly, I believed, was that these many people (both men and women) living in the drier regions of the district were less inclined to agriculture than they were to pastoralism or fishing; in other words, to work as a hired agricultural labourer was perceived as inferior to other activities such as herding livestock for payment, fishing or trading in fish.

Based on rough averages (prices were usually set through bargaining and influenced by personal relationships) on a district-wide basis, the daily cost for one worker to plant, weed or cultivate using a jembe (hoe) cost upwards of 20 K/sh. The cost to plough using oxen was set at least 200 K/sh. There was a definite influence of gender on both the allocation of work and price-setting in hired labour. For instance, cultivating with a jembe, planting and weeding were typically performed by women whereas men often owned

and managed oxen ploughs and were hired to till and clear land. It can be argued that cultivating by hand was at least as much, if not more work than directing a plough but the former was undervalued because it was slower, less technologically dependent and performed by women. Ironically, both male and female farmers indicated that they preferred hiring women because hand cultivation using a jembe breaks the soil and removes weeds rather than turning weeds under the furrow where they eventually seed and regenerate. Women were also preferred as harder and more reliable agricultural workers. Any cash increase for this preference was not reflected in wage rates and may be negatively influenced by the imbalances in the district population gender ratio.

#### Gender and the Estimation of On-Farm Agroforestry Labour Demands

Gender relations influence farmers' interpretations of labour demands on the farm. For instance, just less than two-thirds of the farms represented in this study (63 per cent) indicated that the amount of work on the farm was increasing while another third indicated that work on the farm was relatively unchanged although labour demands were influenced by seasonal climatic conditions. This latter qualification was made mainly by farmers who lived in the medium agro-ecological zone, Boro Division, where climatic fluctuations are more pronounced than in other areas of the district. Among AEP farmers who suggested that on-farm labour

demands were increasing, men most often attributed this situation to declining soil fertility (low yields and lack of animal manure) and a lack of tools. Women, on the other hand, felt that the reason for an increase in work was their declining energy and exhaustion from multiple tasks, poor health and age. In comparison, men's and women's responses were quite different. I believe that these differences arise because men tend to have a more limited appreciation of the intensity and extent of work activities associated with the agroforestry. Similarly, men may also tend to believe that improved farm productivity is related to technological farm inputs such as fertilizers and tools rather than labour because they themselves are not performing the majority of on-farm work. Also, related to this latter point were women's critique of tractors and xen-ploughs which they said were driven by men but still required women to hand-hoe the furrows in order to break up clods of soil and remove weeds.

When questioned specifically if agroforestry was their increasing labour demands, 53 per cent of farmers answered affirmatively. Yet, in general, farmers felt that the direct benefits of agroforestry (woodfuel, soil conservation and increased agricultural crop productivity and tree product diversity) offset the additional labour. However, it was men who felt that crop productivity had increased while the majority of women believed that agroforestry either kept crop productivity the same or decreased it.

It tended to be women, not men who remarked that "crops and trees don't do well together," a reference to tree-crop competition for limited water, sunlight and space. I compared my results to the 1989 Agroforestry Adoption Survey. Apparently, such remarks by women farmers were more common among farmers who worked less than two hectares of land and where the major agroforestry interventions included border planting, random mix and woodlots. Admittedly, on small land areas which used these types of agroforestry interventions, the competition between trees and crops could conceivably be higher. Based on my limited data, I cannot offer a more detailed analysis of this point but it is possible that women are more conscious of tree/crop/livestock competition because men have a more intermittent role in agricultural labour.<sup>3</sup>

#### Cash Remittances and Agroforestry Labour Demand

In the absence of men and children, I found that labour deficits among AEP women farmers were increasingly replaced with hired labour but only when labour deficient households could afford the required cash and to a lesser extent, in-kind payment. This was a widespread option adopted not only among wealthier farmers but also, among poorer elderly and widowed farmers who lacked male and child labour.

Some of the cash used to hire labour was remitted by husbands or

older children working away from home or involved locally in non-agricultural activities such as fishing or petty trade. However, external remittances were reportedly insufficient and/or irregular. Some farmers indicated that if the family received 100 K/sh per month it was fortunate. Given the rate of inflation and low pay increases and rising unemployment in Kenya, this figure is close to past district assessments which have documented that average remittances can be only as much as 15-20 K/sh per month (Belgian Survival Fund, 1984).<sup>4</sup> Also, some farmers complained that often remittances arrived too late to make a difference in cultivation that season. As a result, the remittance might be saved for emergencies or invested in food, school fees or other household requirements. According to women farmers whose husbands were non-residents or temporary non-residents, their husbands would often suggest choices as to how the money should be spent. Thus, women did not necessarily have control over external remittances.

Without regular access to external remittances, the only other source of cash for hired labour was through petty trade and other income-generating activities which are overwhelmingly carried out by women. Over 85 per cent of the farms involved in the study had at least one direct means of generating cash. Often described as activities of the "informal economy," income-generating activities varied significantly across the district due to local agro-ecological potential and differential development. In the semi-arid zones of Rarieda, Bondo and Boro divisions, small-scale trade

in fish and grains, the sale of livestock (cattle and chickens mainly), handicrafts (mats and baskets), timber and poles, charcoal and woodfuel were major economic activities. In the moister, medium- to high-potential zones, income generation was mainly directed to petty trade of grains, sale of labour and handicrafts (baskets, ropes and knitting), fruit and home-brewed alcohol.

As I discuss in the following section of this chapter, women tended to maintain decision-making authority and control over cash income earned from petty trade and other off-farm activities. In labour deficient households, women's income was used for subsidizing the absence of male and/or child labour by hiring of local workers. Therefore, women were recycling their off-farm labour back into on-farm activities which were central to agricultural and agroforestry production.

#### **Decision-Making and the Control of Benefits**

Over two-thirds of the women involved in the discussions indicated that they made decisions about the agricultural produce of the fields they cultivated. These crops included grains and vegetables for either domestic use or market sale. Whereas women tended to have autonomous decision-making power over the choice of food crops, men, typically made most the decisions related to the cultivation of non-edible cash crops such as cotton, sugarcane and coffee. Men also controlled the proceeds from the sale of these



crops. Yet the permanent and temporary absence of men and the unreliable workings of government-run marketing boards and co-operatives have made grains such as maize, sorghum and finger millet the main "cash crops" of Siaya District.

This redefinition of "cash crops" has had a significant influence on gender relations within the farm households involved in this study because decision-making and the control of income from food crops were largely the responsibility of women and cash crops tended to fall within men's decision-making jurisdiction.

In the local sale of food crops, women decide to either market their own produce or purchase produce from local grain boards or neighbours with a surplus. This decision is reached through women's careful and complex estimates of climatic conditions, domestic consumption, cash requirements and market prices.

When it comes to tree crops, it is interesting to note that there is a discrepancy between the gender allocation of decision-making and control tree products versus agricultural crops. Nearly half of the farmers interviewed indicated that it was the men (both husbands and sons) who were responsible for deciding on the species of tree to be planted while 23 per cent of the farmers said that such decisions involved both women and men. Variation in these decisions was determined by two things: 1) the exact species type (exotic and indigenous), and 2) their productive value (fruit,

timber etc.). As discussed earlier in Chapter 4, the commoditization of land and also of trees, can transfer many of the decisions and control over trees and non-edible tree products to men because the market gives certain tree products a greater monetary value. For instance, decision-making over the harvest a tree for timber and poles tended to fall within men's decision-making authority. Theoretically, the same tree coppiced (trimmed) for firewood would tend to fall within women's decision-making arena.

The influence of gender relations on the selection of tree species is also affected by whether or not the seedling is raised on the farm, purchased or provided free by a group or school nursery. For instance, in homes where men were at least temporarily resident, women were entirely responsible for the storage and preparation of seed for food crops, but men were consistently reported as responsible for the storage of tree seed. Less than 7 per cent of the farms involved in this study currently had on-farm nurseries and in all cases but one, men maintained the major decision-making over the propagation of seedlings while women and children contributed to such tasks as potting or watering seedlings. As I indicated on the previous page, men, including both husbands and sons, had a strong role in decision-making over the species of tree seedlings raised in on-farm nurseries and planted on the farm. Women, however, often remarked that "it depended on what was available in the group nursery;" apparently

women exercise their own authority over the selection of tree species when they carry seedlings home. In over half of the cases where, the seedlings were purchased from a non-group or school nursery or given a commercial value, decision-making regarding species selection again fell within men's (husbands and sons) domain.

Women consistently controlled both the sale and income from soft fruit such as bananas and papaya which are easily grown and do not require significant inputs such as pesticides. Oranges however, were often referred to as men's fruit, likely for the reason that they are a more capital intensive crop. Women are also able to harvest and sell chiwa (Tamarindus indica) but often only with the help of children who climbed trees to pick the fruit. Yet, as women complained, soft fruits are undervalued in local markets and although they could sell bananas and papayas, they could not refuse their children the fruit. Children however, could be beaten when they "stole" oranges from the trees without the permission of the mzee (father, grandfather).

The sale of timber and poles from the farm was largely controlled by men -- either older sons, husbands or fathers-in-law, depending on who had planted the trees and whether they were planted with a predetermined purpose such as house construction. In addition, older sons and men reported generating income through the sale of seedlings and charcoal. Women's decision-making role in the actual

planting of trees did not guarantee them authority as to the sale of the trees for timber or poles. In many cases this meant that although women (including first wives) could coppice tree species suitable for timber or poles, they could not cut the main bole of the tree without first conferring with their husband. Some women did independently decide to harvest Leucaena leucocephala for smaller poles for animal enclosures and granary construction. As Chapter 5 elaborates, many of these linkages between decision-making and control of cash and non-cash benefits of agroforestry are strongly linked to issues of land and tree tenure.

The gender division of labour, as it relates to forestry, typically dictates that women's labour and decision-making also control the collection, use and sale of woodfuel. Again, it is the exceptions rather than the rule in this situation that are illuminating. In two discussion groups, one held in Rarieda and the other in Ukwala-Ugunja, men explained that they were the "supervisors" of woodfuel collection responsible for organizing the household supply, cutting on-farm trees and the sale of woodfuel. When questioned further these men admitted that women did the actual work of coppicing, carrying, storing and marketing of the woodfuel. Men rationalized these contradictions and their inherent notions of male superiority with comments such as "ideas are more important than work" or "labour can be bought but a good decision cannot."

As extension workers involved in this study stressed, linking

issues of labour to decision-making and control of benefits is easily avoided or circumvented in the extension of agroforestry because these relationships are quite complicated, socially sensitive and household specific. Yet, it is essential that the CARE-Siaya AEP realize that not only is the practise of agroforestry in Siaya District dependent on women's labour but agroforestry will not necessarily guarantee women control over the results of both their productive and reproductive labour and therefore, the actual socio-economic benefits of the project may not be achieved.

If women's labour could be understood within the concept of the "production of life" it would be possible to see that women's labour, decision-making and control of benefits for both the production and reproduction of the agroforestry system are inextricably linked (Mies, 1986; Kettel, 1990a). Using this concept, it would not be necessary to distinguish women's on-farm from their off-farm labour and status. Women work in the home, agroforestry and market to simultaneously produce and reproduce the necessities of life for themselves, their children, husbands and extended family and community.

I have argued here that in a study of agroforestry the "production of life" can be given a practical context. For instance, women work off the farm in such activities such as petty trade in agricultural or tree crops to generate cash income which will allow

them to hire on-farm labour which subsidizes labour deficits. This is one way in which women produce and reproduce the agroforestry system. Women's production of life is also evident in women's production of agricultural and tree food crops which can be used for both domestic consumption and market sale. Women provide their labour to food crops as cash crops and thereby, reinforce their rights of decision-making and control of benefits. Women's resistance to the cultivation of cash crops such as cotton, sugarcane and coffee in Siaya District is a practical recognition that such crops cannot be eaten in the event of adverse climatic or market conditions. Yet, their resistance to non-edible crops is also a rejection of barriers between women's labour, decision-making and control of benefits.

By challenging the obstacles to their "production of life" and the potential for their work to translate into decision-making and control of benefits from their labour, women in Siaya are confronting the status quo of household gender relations. The CARE-Siaya AEP must recognize and understand women's production of life and the impact of gender relations in the practice of agroforestry and all on- and off-farm functions. As I now discuss in the following chapter, the AEP will also need to identify the role which individual farmers' perceptions, emotion and experience also influence the dynamics of individual and household gender relations. Without recognizing the importance of gender-based power relations, the project will likely work against improvements

in gender-based inequality rather than achieve the socio-economic well-being of the community the project was designed to assist.

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#### NOTES

1. By using the term "monetary value" I am referring to the value of labour in narrow economic terms. The psychosociological value of labour involves both a psychological and social interpretation that discriminates against women by giving more importance to men's labour more than women's (see also Young, 1988b and Segall et. al., 1990).
2. Future labour allocation studies in AEP should therefore collect and analyze data on an annual basis. This important point was ignored in a recent labour allocation report by CARE-Kenya (Martin, 1991).
3. This remark was also made by Sara Scherr, who was a principal researcher in the 1989 Agroforestry Adoption Survey after she reviewed the initial report I produced for CARE-Kenya.
4. The amount of 15-20 K/sh per month was equivalent to CAD \$1.50.

## CHAPTER 6

## INTERNAL POWER RELATIONS

## PERCEPTIONS, EMOTION, EXPERIENCE

Many studies have demonstrated that an awareness of local people's environmental perceptions leads to an improved understanding of the use and in some cases, what may appear as a misuse, of natural resources (Whyte, 1989). In addition, the work of Chavangi, Engelhard and Jones (1985), Rocheleau (1990), Leach (1991) and Agarwal (1992) has confirmed that men and women have complementary and/or conflicting perceptions of the same environment; so, in order to understand environmental perceptions, an examination of gender relations at all levels of the society is a prerequisite for researchers or project planners.

To advance this argument, I submit that gender-based variation in human perceptions of the environment is an important facet of the existing and evolving power relations between men and women. These power relations develop because men and women have separate but related interpretations and therefore, interactions with the environment. Furthermore, as I later discuss, such power relations do not only exist between men and women but also, within groups of men or women -- a distinction which has not yet gained sufficient prominence in the literature.

As this study reveals, understanding the ways in which power



relations at the level of the individual are articulated and analyzed is not a simple task. To understand the complexity of internal or endogenous forces which shape a person's opinions or perceptions, it is useful to consider a concept from environmental studies -- the notion of the environment as a "sense of place," a three dimensional realm of **perception** (knowledge, attitudes, memories), **emotion** (values, beliefs) and **experience** (contacts, travel, insider/outsider relations) (Hay, 1988).

It has been argued elsewhere that a "sense of place" affects the full spectrum of human behaviour and although an attachment to place develops from a broader sense of social "belonging," it is individually held and unique (Tuan, 1976; Hay 1988). Is the "sense of place" a gender-related phenomena? A Gender and Environment approach would reply to this question in the affirmative because the meaning of gender illuminates an understanding that although the two sexes co-exist, they are socialized differently (see Chapter 1) and therefore, men and women would be socialized to have a different but related "sense of place." This subsequently leads to questions which move beyond identifying the impact of gender on individuals' "sense of place" such as -- what influence does gender-based variation in perceptions, emotions and experience influence agroforestry and vice-versa, how will agroforestry influence gender-based variation in farmers environmental perceptions, emotions and experience? More generally, in what ways will gender relations shape an individual's interaction with

the environment and consequently, their participation in development activities? In this chapter I examine these questions.

### Perceptions, Motivations and Knowledge

Differences in men's and women's perceptions of land, crops and trees have been previously described in social analyses of agroforestry and tropical forestry (Hoskins, 1979; Fortmann and Rocheleau, 1985; Williams, n.d.). While similarities and differences exist between men's and women's environmental insight, their perceptions of the environment are not static. I would argue that perceptions cannot simply be classified on the basis of "what a man identifies" or "what a woman perceives" but rather, they need to be analyzed from the standpoint of their expression, influence and change over time as well as the ways in which men's and women's "sense of place" correspond to one another.

However, even the initial task of talking to farmers about their environmental perceptions is difficult. For example, in the pre-testing discussions farmers were asked to describe what they considered to be their major problems on the farm in terms of land, labour and farm productivity. The answers to these questions tended to reflect not what farmers perceived or really knew about their farm problems but what they expected to receive from either the programme or me (for example, tools, money, loans, chemicals and even a tractor).

As a result, following the first pre-test, we altered the question and focused on two of farmers' perceived problems -- land and labour. We asked farmers which problem in farm productivity they perceived as greater: too little land or too much work. The vast majority of men answered that land shortages were the greater problem because further land division among male family members had virtually become impossible. Overwhelmingly, female farmers answered that excessive demands on their labour was the greater problem due to their declining health, advancing age, loss of child labour, lack of cash to hire labour and limited opportunities to make use of group labour. And so, it was through this discussion of farmers' perceptions, that we first detected how women expressed the crucial paradox of land use in Siaya District: **a case of many people but insufficient labour.**

For the most part, men's and women's different perceptions of land and labour availability were minimally affected by agro-ecological variation and this realization surprised me because the 1989 Agroforestry Adoption Survey had found that farmers living on smaller farms in the higher and medium agro-ecological zones had identified land shortage as a major constraint to agroforestry (Scherr and Alitsi, 1990). I found that even in areas where land is scarce, women remarked that labour, not land, was their greater concern. Similarly, in the drier, lowland areas where farm size is larger and cultivation more difficult, men consistently responded that land was more crucial than labour although women repeatedly

disagreed. Both men and women perceived that land and labour shortages were greater now than in the past, although farmers' insights about the causes of these shortages were highly variable and based on personal circumstances.

I also found that women perceive labour shortages as more important than land shortages and will stress this in their conversations with outsiders because (Chapter 4 and 5 explains), women have relatively greater control over their own labour and the benefits of their labour than they do over land. Likewise, men focus on land for the same reason -- because in most cases, men have profound control over issues related to land ownership and distribution.

Understanding such gender-based differences and/or similarities in farmers' perceptions of land and labour also recognizes the fact that women may be more reluctant to discuss matters that involve strategic changes in decision-making and control over land, especially in a group environment where they risk the criticism of men and even, other women. I noted several situations for instance when women deferred to their husbands or sons when we asked about the land registration process. I also noted a few occasions when we witnessed a head wife or mother-in-law abruptly interrupt a younger wife or daughter when the latter spoke of the family's ordeals in gaining the land title or settling land disputes.

Because women, and particularly young women, were either unfamiliar or could not openly discuss issues related to current and past land tenure, we found it very difficult to speak with women about the relationship between themselves and the shamba (farm) as a "sense of place." Instead, it was much easier to recognize women's "sense of place" not in terms of a fixed area of land but in a more abstract sense of community -- focusing on their marital home, close neighbours, relatives and small trading centres. On the contrary, land or the farm as "a sense of place" was a much easier relationship to discuss with older men who provided detailed chronological descriptions of land inheritance and future distribution of the land among the sons. In this way exogamous marriage among the Luo of Siaya, reinforced by the anomalies of customary and statutory law, provide a good example of how external power relations determine significant gender-based variation in a man or woman's individual sense of place.

Although we found that women and particularly, young women may be not be able to freely discuss such strategic issues such as land tenure, this did not mean that rural women in Siaya were unaware of their relative position in Luo and Kenyan society. This realization was best illustrated in our discussions with farmers regarding their "needs" for agroforestry. Actually, we found that it was primarily men who distinguished basic needs such as food, water and shelter from strategic needs such as training and land. In the former sense men designated tools and technical assistance

while in the latter sense they wanted loans, livestock and land. Women, on the other hand, were more likely to say that they saw only one set of needs or that basic and strategic needs were the same thing. They wanted more food but at the same time, this meant that they needed access to more land and labour. The metaphor used by one farmer was, "how can you begin to cultivate a second field when you haven't finished the first?"

Based on this experience, I believe that the dichotomy of basic and strategic needs may not be an accurate reflection of women's environmental perceptions or their "sense of place" and yet project activities in the AEP have drawn definite conceptual and practical boundaries around two areas of "needs." For instance, extension worker interviews indicated that many of these CARE-AEP staff felt that women's conditions and basic needs must be addressed before issues involving women's socio-cultural, economic and political position and related needs can be considered. The question in my mind was whether or not this separation will actually benefit women if it serves to focus on "basic needs" rather than underlying causes of environmental degradation and poverty which involve the position of women and strategic issues such as land and tree tenure, credit and market forces.

I argue that the AEP must recognize that women's conditions and position and their related development needs cannot be addressed in isolation from one another. In other words, strategic concerns

such as guaranteed access to land, markets, credit and control of cash income are as important and relevant to agroforestry as increasing crop yields. Women farmers perceived that the project could best assist them by the provision of loans and financial support to hire labour, improve their petty trading activities and market agricultural and tree products (seedlings, fruit, poles and fuelwood). Women also suggested that individually and as a group they would like to receive training on small business management. By addressing such needs the project may be able to better address issues of gender relations in agroforestry.

Aside from understanding how farmers perceive two of the most crucial inputs into agroforestry such as land and labour, I wanted to discuss what agroforestry actually meant to them and how it motivated farmers' interpretations of their "sense of place." Despite the fact that the population of farmers surveyed were exclusively participants in an agroforestry project, an surprising 16 per cent of farmers told us that they were not practising "proper agroforestry" and three-quarters of these farmers were women. Exploring this situation, I found that these farmers tended to identify "proper agroforestry" with alley-cropping and/or random mix techniques. Although these farms possessed natural and planted trees which were used for aesthetics, fruit production or timber and poles, these farmers did not perceive themselves agroforesters in either the past or present tense. When we pointed this out to farmers, they replied with comments such as, "we have been doing

this (agroforestry) since kwere machon (the ancestors) but it is not enough to push us forward." Certainly among this 16 per cent of the total farms involved in the study agroforestry and the development project had not strongly influenced farmers' articulation of a "sense of place." However, among the majority of other farmers, the actual practice of agroforestry and the Agroforestry Extension Programme had both a positive and negative motivation for farmers' "sense of place."

The positive influence which I detected derived from certain farmers' who had a clear commitment to both the extension and practice of agroforestry. As one woman farmer said,

"my idea is to have many trees -- even the beautiful ones with blossoms like the one my neighbour brought from Tanzania ... the trees (the name of the extension worker) says will keep my soil from running away and give me enough wood so when I am old I only need to walk a short distance to carry fuelwood."

Although I hesitate to judge the project or the farms, for purposes of explanation, I estimated that this generally committed and satisfied group represented approximately one-third of the total number farmers involved in the study. Over half of the farmers involved in the study however, were dissatisfied with either the practice of agroforestry or the project itself. In many cases the actual techniques associated with agroforestry and the AEP cannot be distinguished in the conversations with farmers. This displeasure occurs for a number of reasons and often for highly specific reasons. Among this significant proportion of farmers' involved in this study the perceptions of agroforestry and the



project ranged from mild remarks such as "we have many problems here and the CARE people can only bring us trees" to more problematic situations such as our experience with a group of three families involved in the AEP who complained that an often inebriated extension worker had stopped assisting them and therefore, they had given up trying to practice agroforestry. In this particular group, there was no commitment to agroforestry and certainly, these farmers no longer seemed motivated to be involved in agroforestry again.

A key aspect of deciphering farmers' "sense of place" and differences of interpretation based on gender relations involves an understanding of local people's accrued knowledge of their environment. It has taken mainstream development projects and policy four decades to appreciate that people in the Third World possess environmental "knowledge" which can be far more advanced than so-called development "experts" comprehend (Harrison, 1987; Beauclark et.al., 1988). Through accumulated life experience and experimentation, rural people accrue specific information and awareness about the environment in which they live, and this recognition underpins the concept of "traditional knowledge" which has become an key topic in development (Beauclark, 1988). However, as Shiva (1989) and Stamp (1989), among others, have pointed out recognizing the importance of "traditional knowledge" must also incorporate an assessment of the meaning of "tradition" as well as "knowledge." These critique is central to the

intersection of gender relations and "traditional knowledge" because "knowledge" has tended to refer exclusively to Western or European "science" while explanations of "tradition" have often served the interests of the male elite to the detriment of women's lives (Harding, 1987, Stamp, 1989b).

I found practical examples of the relationship between women farmers' traditional knowledge and imported technologies based on a Western "scientific" knowledge when farmers' perceptions of agroforestry and their "sense of place" were probed. For instance, two co-wives were questioned about the differences between their fields and the fields which they referred to as their husband's where incidentally, alley-cropping (the interplanting of rows of trees and crops) was being conducted. The women explained that agroforestry increased the work on the farm because the crops had to be planted in rows. Yet, based on their experience, broadcast seeding was preferable to row-planting. This involved "casting" the seeds by hand rather than dropping the seeds into prepared rows which was the women said was not only less labour-intensive but, based on their own experience, provided comparable yields. The women also pointed out that the "rain stayed in the ground," referring to the prevention of soil erosion resulting from the concentration of water run-off in rows between the crops. The women complained that they were called "backward" by their husband and had to concede to his directions by row-planting crops in his alley-cropping field. Yet, in their own fields, the women

broadcasted the seeds and did not practice alley-cropping.

In this example and others too numerous to list here, farmers involved in the CARE-Siaya AEP have accrued significant knowledge about agroforestry and its key elements of land, trees, crops and livestock. Examples such as the one described above have a "scientific" basis as far as the women farmers are concerned and perhaps in their local agro-ecological conditions Western "science" would agree. To date, the Agroforestry Extension Project has not addressed these types of situation adequately both in terms of research and extension although such situations have apparent repercussions on both agroforestry practice and an understanding of gender relations in extension work.

### Emotion, Values and Beliefs

Emotion, values and beliefs all play a powerful role in shaping an individual's "sense of place." The importance of beliefs associated with land, trees or gender have been a particularly important feature in the literature on social dimensions of agroforestry (for example, see Hoskins, 1979; Chavangi et.al., 1984). There has been no analysis of emotion per se in the study of agroforestry while the relationship between gender, values and agroforestry tends to focus on farmers' incentives for agroforestry with the notable exception of Williams (n.d.) and Rocheleau (1987). Proverbs, taboos and rituals have been the most popular

representation of the effect of beliefs on the relationship between men's and women's interaction with the environment and in this particular case, their role in agroforestry. For instance, in Siaya District there are taboos related to certain tree species and specific locations in the compound or fields where certain tree species can or cannot be planted or harvested and farmers will often relate these taboos using proverbs. Rituals, such as the first wife initiating each season's cultivation is another belief which continues to influence agroforestry.

Comparable to the critique of "tradition," however, I assert that the role which beliefs play in any culture and society, must be carefully considered within the context they are held and the emotion and identity of the users. Without such a cautious approach, an examination of beliefs runs the risk of being falsely separated from the original context in which they developed. Beliefs, in this sense are social constructions arising out of a particular setting and set of circumstances. In this respect, they may be significant or relevant in the time or space in which they were created but may not be transferable beyond that point. For instance, during the course of this study it was apparent that a variety of elaborate taboos have been produced and reproduced to ensure that tree-planting remains the reserve of men. Curiously, many of these beliefs related to women's reproductive concerns. For example, we heard that "women should not plant the banana tree because while it will bear fruit she will be barren." Yet, Luo

women do plant banana trees and other trees as well, albeit under certain circumstances and in certain areas of the farm (see Chapter 4). In such cases, taboos may represent existing conflicts in gender relations such as male control over tree-planting and subsequently, over land ownership. As well, the extent to which women and men adhere or ignore certain beliefs may very well reflect the extent to which an individual's "sense of place" is also related to their sense of gender equality.

As Williams (n.d.) has explained, men and women may have distinctive "values" associated with land and trees. In this study we found that the "value" of land and trees may be confused by farmers and extension workers with the idea of financial "value" or incentive. But we could also identify the spiritual or emotional "value" attached to land and trees which could reflect the extent to which farmers were active agroforesters. For example, farmers could proudly relate the history of certain trees in the compound, providing us with details of the year a tree was planted, the species and where the seedling came from. In many compounds, trees provided a central meeting place for the members of the household or community and a site for relaxation. One woman farmer apologized that she could not welcome us to the shade of a tree because the trees around her newly-built home had just been planted. Another illustration of the value of trees, is evident among some clans, who plant trees close to the graves of a respected ancestor while conversely, in other areas of the

district, graves in the compound were kept clear of trees because the site was special. Clearly, in this respect, trees can be landmarks in a man or woman's past and/or present images of their individual "sense of place."

To investigate the relationship between gender, values and agroforestry further, we asked farmers why they valued land. The range of answers was vast but only a few answers had monetary significance. Often answers were interwoven with anecdotes and proverbs. In one discussion we were told "without land, a man is nothing, his wife is nothing and there is nothing." In many cases, we found that the "value" of land was directly related to the gender division of responsibilities and labour in the household. For example, many men responded that land was valued because it provided soil provided merrum (fine gravel) for house construction (a man's responsibility) while women said that land was valued because the soil was used for smearing the home (a woman's responsibility). In this case, men and women provided a similar answer (land was valued for soil) but due to the gender division of labour, women and men replied with different and perhaps conflicting uses of the same soil and land; such situations clearly have important implications when it comes to farmers' willingness to speak about a certain issue or to become involved in a particular project activity.

### Experience, Travel, Insider/Outsider Relations

Adopting Hay's (1988) three dimensional model of the environment as a "sense of place," the third facet of what I have referred to as the internal or endogenous forces shaping men's or women's interpretation and interaction with the environment is derived from their life experience. In this sense, experience involves the networks of communication and contacts which people are exposed to each and every day of their lives. Experience also relates to the extent to which people are exposed to the wider society through such things as travel and contact with outsiders. Some questions which are relevant to this discussion of agroforestry arise. For instance, are men and women exposed to the same and/or different experiences? How does this affect the ways in which men and women articulate their "sense of place" and inevitably, their interaction with the environment? Below I discuss some practical situations in response to these questions.

In Siaya District, women work a triple day -- they are simultaneously involved in domestic, market and community development activities (Maguire, 1984). Through activities such as brewing or maghendo (trading over the Ugandan border) some women may also be involved in clandestine activities which affect their participation in on- and off-farm activities but which we found were difficult to discuss with them in detail because such women feared that they would be persecuted by local authorities. In their wide range of on- and off-farm activities, many of which vary

on a weekly, monthly and seasonal basis (see Chapter 5) women maintain networks of communication, contacts and cooperation in order to meet their needs and the needs of their families. While, these networks vary in strength and weakness, they have significant repercussions on the outcomes of development projects, including agroforestry.

One of the best examples of how men's and women's "sense of place" is moulded by local networks of communication and contact is evident among agroforestry farmers' groups which are affiliated with religious groups. In retrospect, I estimate that such groups represent at least one-third of the farmers' groups involved in this study and perhaps as high as one-half of the total farmers' groups involved in the CARE-Siaya Agroforestry Extension Programme. Difficulties arise in estimating the number of farmers' groups which are also church groups because in many cases neighbours or relatives will often be members of the same congregation. Nonetheless, it is important to point out in this case, that people's own perceptions of why they are involved in an agroforestry development project can be shaped by wider socio-cultural affiliation. For instance, in some of our conversations with farmers I was struck by the number of cases where both male and female farmers explained for instance that "God has taught me to plant trees." Originally, I thought that farmers were referring to the fact that they learnt from a very early age the importance of planting trees. While in many cases this was certainly true, I



realized that male and female farmers were also reaffirming a commitment not only to their faith but to the farmers' group which had joined the AEP. Unfortunately, I came to realize the importance of congregational networks in the later stages of my research so I was unable to address gender complementarity and conflict in greater depth. However, as many AEP extension workers acknowledged in our field visits and their interviews some of the most successful farmers' groups in their locations were also congregational groups and extensionists found it easier to meet with farmers' and to communicate their extension messages by accessing these networks.

While farmers' networks of communication had positive contributions to the AEP they also had less than positive implications. For example, networks of communication between farmers could also shape an individual's interpretation of what the AEP could or couldn't provide to farmers. Certainly, in our discussions with farmers we found that if a farmers' group did not perceive that they, their farms or their families would actually benefit from the additional labour or changes required by agroforestry this influenced the individual farmer's participation in the AEP and their attitudes towards their future involvement in agroforestry. In fact, in almost half of the discussions individual AEP farmers reported that problems related to the organization and functioning of the farmers' group to which they belonged and which the AEP was targeted, negatively influenced their current involvement in

agroforestry. Farmers complaints tended to focus on unequal distribution of labour among both male and female group members and poor distribution of seedlings, group-earned income and extension support.

I believe that these problems are related to several things. First of all, both male and female farmers asked us repeatedly why some CARE groups receive loans while others receive tree seeds or seedlings. Through their networks of contacts and communication, AEP farmers' groups had heard about CARE-Siaya's Women's Income Generating project and the attraction of a small loans project was often more interesting than the long-term investment in agroforestry. In another community which is involved in a recent water and sanitation project organized by CARE we heard a similar concern among farmers who asked us why they could not have a water tank in their water-scarce community. From both of these examples we found that farmers networks will influence individual farmers' perceptions of the development organization and moreover, their role in agroforestry and participation in such related activities as soil and water conservation. Gender is however, an important influence in these two cases. It was women for instance, who were more vocal in these discussions than men. I believe this is because women have more limited access to loans and credit than men do (see Chapter 4). As well, women are responsible for carrying water for so that this area is also well within their concern. Even more so, many women farmers are as groups and individuals

aware that the AEP is concerned with women as one farmer said, "(the name of the extension worker) does not wait until my husband returns because he knows he can tell me his news." I would argue that it is precisely because women farmers are aware that the AEP is trying to assist them they feel particularly concerned when the project is not addressing their full range of concerns.

In this latter case, defining the eventual implications of farmers' group and individual experience in the agroforestry development program and future AEP activities requires further investigation. One of the most important ways which the project could address this situation is by carrying out an assessment of the numbers and reasons why farmers have not remained active in the farmers' groups, in the project and/or why they have decreased or stopped being active agroforesters. In this sense, what I am suggesting is that the project carry out a "survival count" for their project participants (groups and farmers) analogous to the types of exercises carried out to estimate the survival of trees planted out on the farms (for example, see Alitsi, 1989). I believe that such an exercise would be a contribute a better understanding in the project (among both staff and farmers) about why and under what conditions farmers' groups and farmers experience in agroforestry and the AEP results in an expansion and contraction of participation. I first had this concern when I was preparing my sample of farms. In comparison to the sample of farmers involved in the 1989 Agroforestry Adoption Survey, I found that seven out of

thirty-eight farmers had dropped out of the AEP while in two further cases, the farmers' group had collapsed (see Chapter 2). When I asked extension workers to estimate an approximate group and individual farmers' "drop-out rate" they could not or did not want to provide me with an average figure. Similar information was not available from the AEP management. The problem which arose was that without an adequate and on-going assessment of individual AEP farmer or group "survival rates" the project has been unable to fully assess the extent to which farmers' perceptions and experience is influencing the AEP and vice-versa, how the AEP is affecting farmers lives. As well, extension workers will continue to believe that farmer drop-out rates are somehow their fault although this is often untrue. Finally, without such an assessment it will continue to be unclear whether the farmer drop-out or group survival rate reflects problems associated with the programming of AEP and/or whether it reflects broader development changes within Siaya District.

Certainly, one of the broader socio-economic phenomena in Siaya District which has shaped individual men's and women's "sense of place" and their involvement in agroforestry has been the extent to which men and to a lesser extent, women, migrate between their rural homes and urban areas, in some cases to gain employment outside of their community which may provide cash remittances for their rural families (see Chapter 5).

Out-migration in Siaya District is a historical phenomena. As I discussed in Chapter 3, the key resource in Siaya District exploited by the colonial economy was not land but labour. The fluctuations of national economic recession and growth which Kenya has experienced since Independence have had less impact on the trend of out-migration in Siaya than might be expected. As a result, Siaya District has remained one of the highest rates of labour out-migration in the country (Belgian Survival Fund, 1984; Were, 1991).

Gender plays a key role in out-migration in Siaya District. In 1969, the resident adult female-to-male ratio was 1.43:1, one of the highest in Kenya at that time (Hafkin and Bay, 1976). In 1989, this ratio is expected to have widened by at least thirty per cent (Central Bureau of Statistics, 1991). Given this situation, the question that arises is how migrants' experiences away from their rural homes may affect their perceptions of gender relations and farm activities. Although I was unable to probe this question in depth with farmers I found no evidence that suggested that men who have worked outside their rural home and who temporarily or permanently return to their rural homes exhibit more equitable perceptions of gender relations or a greater interest in agroforestry compared to men who have remained full-time farm residents.

To summarize, in this chapter, I have argued that agroforestry,

like all other land use systems, is shaped by individual farmers' environmental perceptions, emotions and experience which determine why, when, where and how farmers worked, made decisions or controlled the benefits of agroforestry. Gender relations also influenced the shaping of farmers' perceptions, emotion and experience in agroforestry and therefore, individual farmers' "sense of place." Conversely, both the practice of agroforestry and an agroforestry development project influenced farmers' perceptions, emotions and experience because three of the most fundamental elements in agroforestry, land, crops and trees, were not simply "resources" in a narrow commercial sense but integral sources and features of farmers' "sense of place."

This chapter completes my discussion of results. In the next and last chapter I concentrate on summarizing this study and suggesting recommendations for future efforts in gender relations and agroforestry for the CARE-Siaya AEP and more generally, in the field of gender and environment research.

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## CHAPTER 7

## CONCLUSION AND RECOMMENDATIONS

Whereas Gender and Environment analysis can provide an effective conceptual framework for a study on gender relations and agroforestry, only a field-level examination of these issues can translate theory into practice and subsequently, improve the conceptual framework.

As the previous four chapters demonstrate, the experience of the CARE-Siaya Agroforestry Extension Project (AEP) provides significant contributions to the theory and practice of gender relations and agroforestry. However, the project has important issues to address if it will be capable of reaching its goals of socio-economic well-being and sustainability for the rural poor in Siaya District. This final chapter summarizes the study and offer recommendations for both the AEP and future research in the field of gender, environment and development.

Conclusion

The argument of this paper has had three key themes: 1) the relationship between gender, environment and development; 2) that gender relations shape the practice of agroforestry and conversely, agroforestry influences gender relations; and 3) that the study of agroforestry can both gain and contribute to an understanding of the relationship between gender, environment and development.

is important to reemphasize that the relationship between gender, environment and development is not a collision of two different themes in international development nor a timely coincidence, but a correlation between distinct global phenomena -- gender-based inequalities and the persistence and intensification of environmental degradation. I submit that the key challenge presented to the field of gender, environment and development is to encourage among development practitioners a stronger sense of the conceptual contributions from the field of gender and environment. In other words, the task for academics as well as development workers will be to recognize the actual meanings of gender and environment, to understand the historical context in which these concepts developed both in the literature and in development practice and to begin to change the structures which ignore the diversity of relationships in gender and the environment and therefore, create and sustain gender inequality and environmental degradation.

Gender relations must be addressed at two levels: the first is internal because this involves the structuring of gender relations at the levels of the state and community as well as within the household. Of key importance to gender and agroforestry is the manner in which customary and statutory land law shapes gender equality. Gender, alone and in concert with other social relations such as age or class, determines three central aspects of agroforestry at the household level: labour, decision-making and control of benefits. Secondly, gender relations and agroforestry



are structured at an individual level by an individual man's or woman's perceptions, emotion and experience in their own environment or "sense of place." This is an area of gender analysis in agroforestry which has received only minimal attention yet which as this study has shown has significant repercussions on the practice of agroforestry and the way in which the people perceive the current state and future of their environment.

To complete this study I now turn to propose some specific recommendations regarding gender relations and agroforestry for the CARE-Siaya Agroforestry Extension Project.

### Recommendations

It is clear that in order for the CARE-Siaya AEP to ensure that women as well as men benefit from agroforestry a serious effort must be made by the project to address issues of gender relations. A Gender and Environment approach remains skeptical of "Gender and Development" strategies which are injected into existing project structures that may be inherently resistant to some of the key aspects in gender-based programming. This does not mean that the prospects of existing projects such as the CARE-Siaya AEP are hopeless. As I have discussed earlier, Gender and Environment is based on the premise that just as social relations are created and reinforced so can they be changed. Gender and Environment analysis provides a potentially significant framework for an analysis of

the issues but its theory must be linked to action. Below, I summarize some aspects of the CARE-Siaya AEP where I believe immediate action can be taken to identify and address the impact of gender relations in agroforestry.

### **Improving the Gender and Environment Research Component of the Agroforestry Extension Project**

The AEP requires further social analysis of its activities on an ongoing basis. New research projects may be adopted but existing research activities should also be improved by addressing the impact of socio-economic and specifically, gender issues in agroforestry. In research currently underway in the AEP, such as On-Farm Monitoring activity supported by AFRENA (see Chapter 3) and the Participatory Monitoring and Evaluation (PM&E) exercises, there are ample opportunities to investigate ways in which the project could be restructured in order to address the impact of gender relations on agroforestry (and vice-versa).

As this study has argued, the crucial issues for research within the AEP include: 1) the relative access and control by men and women over land and trees at the levels of the community and household; 2) equitable distribution between men and women of the benefits of agroforestry; 3) the effects of similarities and differences in men and women's perceptions, emotions and experience regarding these resources; and 4) to recapture the history of land

use within the district in order to re-examine the accuracy of activities or perceptions that are considered "traditional" and to understand how farmers' past experiences with agriculture, forestry, women's projects and outside agencies are affecting the progress of the agroforestry project.

## 2) Accountability to Farmers in CARE-Siaya AEP Research

Research projects in the AEP have typically interviewed farmers, collected data and disappeared. Farmers are left without any feedback from the researchers and there are even cases where extension workers have no idea of how the information gathered was used. Yet farmers turn to extension workers for answers. As a result, the relationship between farmers and extension workers can be strained and farmers in the CARE-Siaya AEP are resisting involvement in such research. Quite simply, the AEP must ensure that the results of all internal or external research is returned personally to the farmers. The project may also consider the possibility of identifying and building upon farmers' own networks of communication in order to provide feedback from their various research activities (see Chapter 6).

As well, other methodological concerns for internal research must be maintained. For instance, in a recent CARE-Kenya study, extension workers were also able to select farmers of their choice for the interview (Martin, 1991). Without random sampling,

extension workers (on their own admission) tend to focus on receptive farmers most of whom are men and considered to be "progressive" farmers. The project must also examine methods which commonly uses to gather information on agroforestry and to recognize the extent to which these methods improve or detract from farmers' willingness to explain their participation in the project and their agroforestry-related activities.

### Recognizing Women's Production of Life in Agroforestry Extension and Research

In all AEP program activities, an understanding of the relationship between women's productive and reproductive responsibilities must be encouraged. If the project tends to concentrate on women's productive role in agroforestry only, it risks the possibility that women's participation in agroforestry reinforces their already significant work burden. On the other hand, if the project maintains its view that gender relations in agroforestry are a "private" (family) issue, then the project will not recognize how women in Siaya are challenging the status quo because they want to improve the well-being of their families and themselves. For instance, women farmers in the AEP lack and request support for the production (ie. hired labour) and marketing (ie. credit, transport, business skills etc.) of agricultural and tree crops because women want they can directly translate their immediate labour into short-term long-term decision-making and control over the use and sale of

the produce. Likewise, if the project understands the implications of the "production of life" it would see that gender relations are central to an understanding of how food crops have become the most reliable "cash crops" in Siaya and why women choose to grow crops they can use for either consumption or marketing purposes.

In this respect, the AEP would be well advised to tap into existing and perhaps, new ways of providing women with credit for agroforestry. For instance, in CARE-Siaya's Women's Income Generating (WIG) project the repayment rates of farmer credit are commendable and this experience must be drawn upon in the AEP. WIG could also work more closely with the AEP in order to carry out small business training for women. This activity should also assess whether women and their families would benefit most from support to food crops or tree products which women control (eg. woodfuel, soft fruits etc.).

### **3) Concentrating More on the Forestry Component of Agroforestry Than the Agricultural Component**

When an agroforestry component focuses more strongly on the forestry aspect of its work rather than the agricultural component, it ignores an important aspect of women farmers's lives. The AEP must focus on improving the agricultural (ie. food crop) component of its activities because as this study has shown, women contribute their labour and maintain decision-making authority and control

over the sale of edible food crops. Women then reinvest the returns of their labour into the farm by using cash income to hire labour and to obtain health care for themselves and their children and children's education.

While some extension workers have reported that they have recently received advanced agronomic training this training should be expanded to include more extension workers and possibly, demonstration farmers.

#### 4) Contributions to a Wider Social Awareness of Gender Inequality

Aside from improving female farmers' access to training, marketing advice and credit, the CARE-Siaya AEP can also improve on existing farmer incentives. One such initiative is the Agroforestry Award given to successful AEP farmers during the District Agricultural Show. This award, along with the annual display at the show, could be used to advance awareness within the project and the community about gender issues. The display and awards could highlight women's experience in agroforestry, local female role models and other topics relevant to gender relations and agroforestry.

Other opportunities for the CARE-Siaya AEP to advance its own understanding of the impact of gender relations on agroforestry and the role of gender in society in general is to collaborate with other local organizations who are active in promoting gender and

development training for both extension workers and members of the community. In Siaya, this would include closer collaboration between the AEP and the Diocese of Maseno West and the Women's Bureau at the Ministry of Social Services and Culture.

#### 5) Gender, Land and Tree Tenure Training for Extension Workers

During the "feedback" seminar for this study which involved AEP extension workers, the latter suggested that the project could include more detailed information about issues such as statutory land law in the training of extension workers. Resource people from the area (for example, the District Lands Officer) or other organizations involved in this area could be included in the training (see for example, Kadura, 1986). The resource centre of the AEP also requires further information on this subject.<sup>1</sup>

However, with new knowledge comes new responsibility and extension workers must be given greater support for their efforts to not only meet more often with individual farmers and but to be supported by the project when they enter into potentially conflictual situations involving gender relations, land and tree tenure. Many extension workers in the AEP are dissatisfied with various aspects of their work (workload, transport, pay, benefits, etc.). As long as these basic concerns remain unnegotiated, new AEP activities, including gender and development related activities will be perceived as additional and not essential work.

Indeed, the ability of extension workers to encourage farmers to discuss gender relations which affect agroforestry adoption and the distribution of benefits is a communication skill which requires sensitivity and understanding. This training is essential in the AEP; as one extension worker explained, "it is easy to avoid talking about issues related to gender and development because they are very personal and often threatening to both women and men." In order to be as realistic as possible, such training could take place in co-operation with the AEP's on-farm monitoring or tested during participatory monitoring and evaluation (PM&E) activities.

To summarize, it is not too late for the project to consider the impact of gender relations on agroforestry in Siaya District and conversely, the impact of the agroforestry project on gender relations at all levels of society in Siaya. This effort must be considered immediately however if the AEP is to complete the project by transferring it to the forestry department of the Government of Kenya as planned. For instance, considering the lack of resources which the government faces, the AEP needs to examine as soon as possible the ways in which agroforestry can be built into longer-term, more sustainable alliances which challenge gender inequality and environmental degradation -- not reinforce these detrimental phenomena.

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NOTES

1. I did leave some important references with the AEP (eg. Wangala, 1989). Problems arise because the materials are located centrally in Siaya without sufficient dissemination of information. The resource centre manager is interested in increasing information support to field staff but requires more time and support from upper management.

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## APPENDIX 1

### AGROFORESTRY AND GENDER AND DEVELOPMENT A RESEARCH PROJECT

#### ENGLISH QUESTIONNAIRE

##### Introduction

1. Greet the farmer(s) and the family.
2. Request that we speak with both adult male and female members of the family who are presently at home.
3. Explain the purpose of the study:
  - to assist CARE in offering the farmers improved extension services and training opportunities;
  - to learn specifically about the changes occurring in Siaya District regarding land availability and ownership and the positive and negative changes in male and female farmers' lives;
  - to understand how agroforestry is influenced by and influences issues of land use and decision-making in the farm household.
4. Please explain that this is not a government survey but a detailed interview which we would like farmers and their family to feel free to participate in. All answers will be kept in private and names will not be used without the farmers' consent.
5. Explain that at least two of the interviewers will keep notes so that we don't miss any of the farmers' replies.  
  
Ask farmers if they have any questions and if they wish they can ask questions at any point in the interview.
6. BEGIN THE INTERVIEW BY MAKING NOTES OF THE FARMERS' NAMES, VILLAGE, SUBLOCATION, LOCATION, DIVISION AND DATE OF INTERVIEW AND NAMES OF INTERVIEWERS AND ANY EXTENSION STAFF PRESENT.

tions

<Supplement this question with a sketch of the compound and the fields which you are currently visiting>

Can you describe the compound and the houses and other buildings here?

How many trees are there in the compound? (Give an estimate)

Who planted these trees in the compound?

Why were the trees planted?

<If there is a border or live fence around the compound>

Who planted the border or live fence?

How many fields are there?

What is planted or grazed in each of these fields?

In what fields is agroforestry practised? Why?

Who are the labourers in each field?

<Underline the person who provides most of the labour in each field or indicate if the labour is distributed equally

among more than one labourer>

Who decides how each field is cultivated?

<Underline the person who makes most of the decisions or

indicate if the decisions are distributed equally among more than one person>

Who makes decisions about how each of the fields' produce is used or sold?

- 1) How many hectares (acres) is the compound? How many hectares (acres) are the fields in total?  
(Give an estimate)
- m) Can you tell us how you inherited or purchased this compound and the fields?
- n) Are the fields ever re-distributed among family members?  
<If so> Can you give us an explanation why?
- o) Why do you value land? What is its most important value?
- p) Is there anything else you think we should describe about the compound and the fields?
- 2a) Do you remember how you first learnt about the importance of trees? Who taught you or told you? (eg. grandparents, parents, other family members, teachers, extension workers)  
<If possible use a probe to find out an example of what the farmer learnt>
- 3a) Are the fields and compound registered under title deed?
- b) Under whose name(s) are they registered?  
<Indicate relation to the farmer and family>
- c) When were they registered?
- 4a) Do you own other fields and compounds?
- b) Do you use someone's fields in exchange for money or crops?
- c) Do you borrow other fields for crops, grazing or collecting fuelwood?
- <If so for any of the above ask the following>

How large are the fields?

Where are they?

Do any of your family stay there?

What crops do you grow there?

Do you practice agroforestry there? What kind of agroforestry?

On the farm you are visiting, who lives here all of the time?

Who lives here some of the time?

For your family which problem is greater- too much work or too little land, why?

Is the amount of work on your fields and compound increasing, decreasing or staying the same? Why?

Is the use of agroforestry increasing, decreasing or keeping the same, your -

- labour requirements (time)
- (crop) productivity
- fuelwood supply
- area of land under cultivation

Do any of the members of your family living here have outside employment?

Do you or your family members earn any cash income from such activities as:

- handicrafts;
- working as farm labourers;



- fishing;
- other means? <examples>

b) Who controls cash income in your family from such activities

as:

- sale of cash crops;
- sale of tree products (poles, fruits, fuelwood);
- outside employment;
- petty trading;
- other means?

10a) In your family, who is involved in making decisions about

the following topics?

- food crops to be planted;
- cash crops to be planted;
- the collection of fuelwood;
- the purchase of land;
- when to take a sick child to the dispensary;
- the allocation or giving of land to younger members of the family;
- the storage of seed;
- the species of the trees to be planted?

11a) Have there ever been disagreements among your family members about farm activities? <Explain>

b) How was the disagreement settled?

c) Has there been anytime when a decision could not be made due to the absence of a particular family member?

<This is a sensitive area of questioning; ask for examples only if it seems appropriate>

12a) Can you remember back to the first time when you decided to

become involved in the CARE agroforestry project? How did you reach this decision?

Before you made a decision did you consult or discuss it with anyone? Who?

Is there an equal distribution of decision-making and responsibilities in the family? Why or why not?

What are the woman or women's responsibilities in the family?

How have women's responsibilities changed over time? Can you give us some examples?

What are the man's or men's responsibilities in the family?

How have men's responsibilities changed over time? Can you give us some examples?

What are older children's responsibilities in the family?  
<Asked with reference to both male and female children>

How have older children's responsibilities changed over time? Can you give us some examples?

What are your primary needs for your participation in agroforestry?

<Asked to both male and female farmers>

What are your secondary needs for your participation in agroforestry?

<Asked to both male and female farmers>

it difficult for either male or female farmers to identify primary and/or secondary needs; if so ask why?>

15a) What would you like CARE to do to help you improve your farm activities?

b) Are there any comments, information or questions which you would like us to include in the interview or answer?

\*\*\*\*\*  
END OF THE INTERVIEW

SEE CONCLUDING NOTES FOR THANKING THE INTERVIEWEES AND MAKING YOUR FINAL COMMENTS AND NOTES.

### Conclusion

1. Thank the farmers and their family for their valuable time and patience. We appreciate their assistance in helping us to learn more about their work and experience with agroforestry.
2. If they wish to add any additional comments and questions they can contact us through their CARE extension worker.
3. Before leaving the farm check through all questions and responses and make sure there are no questions left unfinished or unclear.
4. On a separate piece of paper, comment on the following after you leave the farm-
  - your general feelings, opinions and reflections about the interview;
  - comments from the farmers which you found were especially interesting or confusing or contradictory;
  - any body language which you observed from the farmers;
  - any additional notes which you think are relevant to the topics of the study and follow-up discussions.
5. After the field work prepare you field notes as discussed.







32. LIST CHILDREN'S RESPONSIBILITIES 1.  
2.  
3.

33. CHANGES OVER TIME? YES / NO  
WHY?

34. LIST PRIMARY NEEDS MALE FEMALE

1.  
2.  
3.

35. LIST SECONDARY NEEDS

1.  
2.  
3.

36. REQUESTS FROM CARE

1.  
2.

37. IMPORTANT NOTES/COMMENTS ETC.

### Appendix 3

#### Work Activities Associated with Agroforestry (Identified by Farmers)

1. Tree nursery set-up
2. Tree seedling preparation (mixing soil, filling polybags)
3. Crop seed sorting, preparation and storage
4. Planting out trees
5. Cultivating (manual or mechanically)
6. Watering trees
7. Weeding crops
8. Harvesting
9. Collecting fuelwood
10. Cutting poles, timber
11. Terracing, double-digging and other mechanical soil conservation methods
12. Coppicing for green manure
13. Collecting and applying manure to fields
14. Harvesting of fruit, other edible tree crops
15. Grazing livestock
16. Cutting, carrying fodder to animals
17. Herding livestock to cattle dips
18. Granary, animal enclosure construction and repair
19. Harvesting of crops
20. Storage and preservation of crops
21. Marketing of crops (including tree crops sold)
22. Arranging, negotiating and supervising paid labour
23. Thinning of trees, replacement planting
24. Production of charcoal
25. Spreading of ash around crops to repel pests, birds
26. Furniture building, weaving etc.
27. Attending group meetings, group labour events