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A CONTEXTUAL FRAMEWORK FOR INTEGRATED WILDLIFE CONSERVATION USING KAJIADO DISTRICT, KENYA AS AN ILLUSTRATION

By

Timothy George Lauxmann

A THESIS

Submitted to Michigan State University in partial fulfillment of the requirements for the degree of

Masters of Arts

Department of Geography

ABSTRACT

A CONTEXTUAL FRAMEWORK FOR INTEGRATED WILDLIFE CONSERVATION USING KAJIADO DISTRICT, KENYA AS AN ILLUSTRATION

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Many wildlife conservation researchers and planners acknowledge that an interdisciplinary approach is necessary for planning. Many integrated programs implemented since the 1970s have demonstrated positive short-term results. However, these programs also have had the same problems, such as local resistance and political corruption, crop up repeatedly. The repetition of these problems is partly due a limited interdisciplinary discourse between the social and ecological sciences. This argument was supported by a review of pertinent social and ecological literature, which demonstrates the prevalence of neo-Malthusian thought in ecology. While useful for studying wildlife, neo-Malthusian theory inhibits understanding in human societies and results in oversimplifying the human dimension. On the other hand, the literature also demonstrated that social scientists have traditionally had limited understanding of ecosystem processes and interest in wildlife studies. The research question addressed is: what information is required for integrated conservation planning that incorporates historical circumstances, social driving forces, and a dynamic view of ecosystems? The objectives were to help overcome the problems and obstacles listed above by developing a Contextual Framework for Wildlife Conservation. To illustrate the Framework I presented a case study from Kajiado District, Kenva.

© Copyright by TIMOTHY G. LAUXMANN 2003 This thesis is dedicated to my wife Misty and my son Alexander, without whom its completion would not have been possible.

ACKNOWLEGEMENTS

Many people helped in the completion of this thesis as the inspiration for my research came from varied sources. Even though I cannot thank you all, know that I am grateful. First, I thank my Chair, David J. Campbell, for his guidance and letting me develop my own ideas. His dedication to Kenya and Africa and work to expand interdisciplinary cooperation is inspiring. I also thank Henry Campa III of Fisheries and Wildlife who also served on my committee. His help in understanding the ecological aspects of my research was invaluable. The rotating reader on my committee was Antoinette WinklerPrinz. Additionally, I wish to acknowledge the following professors for their help: Bruce Pigozzi and Robert Walker from Geography and Patricia Soranno and Angela Mertig from Fisheries and Wildlife.

My thanks to Perez Olindo, former Wildlife Director in Kenya, for his help and advice while in Kenya and Helen Gichohi of the African Conservation Centre in Nairobi for allowing me to use the 1977 and 1996 Kajiado data. I also thank all those I spoke with in the Kenya Wildlife Service for providing me insight into Kenyan conservation issues. Additionally, David Western needs to be acknowledged, as his work and writings were instrumental in the development of my ideas.

The many friends and fellow graduate students who believed in and encouraged me throughout my efforts deserve thanks as well. Finally, I thank Dr. Lewis Binford, Professor of Archaeology at Southern Methodist University, who believed in and helped me develop my abilities, George Compton for listening, and my father who came through for me when times were lean.

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ACRONYMS

ACC	African Conservation Center
CBC	Community-Based Conservation
GR	Group Ranch
IR	Individual Ranch
IRD	Integrated Rural Development
KLDP	Kenya Livestock Development Program
KWS	Kenya Wildlife Service
MAB	Man and the Biosphere
NC	The Nature Conservancy
NGO	Non-Governmental Organization
0CHA	United Nations Office of the Coordination of Humanitarian Affairs
PAWS	Protected Areas and Wildlife Service
SAP	Structural Adjustment Program
UNEP	United Nations Environment Programme
UNESC0	United Nations Educational, Scientific, and Cultural Organization
USAID	United States Agency for International Development
WCMD	Wildlife Conservation and Management Department
WDF	Wildlife for Development Fund
WEX	Protected Areas and Wildlife Service
WWF	World Wildlife Fund

Chapter 1

INTRODUCTION: THE HUMAN/ENVIRONMENT DYNAMIC

What now remains compared with what then existed is like the skeleton of a sick man, all the fat and soft earth having been wasted away, and only the bare framework of the land being left. —Plato

The **Problem**

The fossil record tells us that mass extinctions have occurred throughout the earth's history. The last great extinction occurred in the Pleistocene epoch, during which the megafauna virtually disappeared worldwide. As with previous mass extinctions, climatic and environmental changes were blamed. However, the Pleistocene extinction may have also included an additional factor not present during previous mass extinctions, a human factor. Some paleontologists believe that human beings may have played a significant role in the disappearance of some species, if only to push them over the edge. This theory termed the "Pleistocene overkill hypothesis", though not conclusive, has considerable evidence to support it (Diamond, 1989: 37-49).

Throughout the Holocene, human society has increased in both numbers and technological capability. Along with these increases in population and material culture have come corresponding increases in pollution, environmental degradation, and the loss of wildlife. Moreover, these environmental impacts have increased dramatically since the advent of the Industrial Revolution to the point where some ecologists believe that we may now be looking at the beginnings of an extinction spasm on the scale of the mass extinctions that occurred during the Cretaceous or the Pleistocene without the corresponding climatic stresses. Indeed, some believe that because of increased human impact the new extinction spasm could surpass previous mass extinctions (Diamond, 1989: 37-49; Myers, 1989: 42-49; Hunter, 1990: 115-138; Western, 1997: 174-176; Terborgh, 1999: 116-120).

In Requiem for Nature, Terborgh lists the greatest threats to modern conservation as: "over population, inequities of power and wealth, exhaustion of natural resources, corruption, lawlessness, poverty, and social unrest" (Terborgh, 1999: 17). In *Conservation for the Twenty-First Century*, Western describes the "Evil Quartet" of land use practices threatening wildlife diversity as habitat fragmentation, the over-utilization of resources, ecological disruption, and the introduction of exotic species (Western, 1989c: 32). In Natural Connections: Perspectives in Community-Based Conservation, Salafsky warns against "the deep underlying threat of ecological collapse latent in the ticking time bombs of human population growth and expanding consumerism" (Salafsky, 1994: 448-449).

These lists of environmental concerns indicate that no one discipline or theoretical **perspective** can address the myriad issues facing wildlife conservation now and in the **future**. Indeed, ecologists are showing increasing interest in studying the human **dimension** when looking at conservation (Western, 1989: 31-41; Meine, 1992: 45-61). Likewise, social scientists are showing an increasing interest in wildlife issues when **studying** people and the environment (Campbell et. al., 1999; Gibson 1999: 1-18).

However, simply seeing a connection between human activities and wildlife diversity loss does little to explain the exact nature of that relationship. Likewise, recognizing the need for interdisciplinary cooperation does not explain how that cooperation can be achieved to address the human/environment dynamic and meet conservation goals.

The understanding that conservation and development are linked has actually been around for decades, as has the knowledge that an interdisciplinary approach is needed to achieve conservation and development goals. Moreover, plans attempting to implement varying degrees of integrated conservation have been and are being tried. Unfortunately, none of these plans to date, despite the degree of short run success it may have achieved, has been able to fully address all the issues facing conservation today, let alone plan for those in the future. Moreover, many of the problems or stumbling blocks encountered by these plans tend to be reoccurring (see Anderson and Grove, 1987; Khalikane, 1991; Western, 1994a; Gibson, 1999).

I argue in this thesis that the main reason for these reoccurring problems is that the discourse between the biological and social sciences is still immature. This immaturity translates into limited understanding between the two groups and likely ^{cooperation} between them as well (Campbell, 1998: 292-296). The prevalence of the neo-Malthusian perspective in the ecological literature (see Brown, 1987; Salafsky, 1994; Terborgh, 1999) and the lack of interest among social scientists in wildlife studies (see Gibson, 1999) support this argument. The problems with applying neo-Malthusian models to human societies are thoroughly discussed in chapter 2. Further related ^{evidence} for the lack of a mature discourse can be found in the way social scientists tend to simplify the natural world and ecologists tend to simplify the human dimension. Such

oversimplification can limit understanding between the two perspectives. To overcome these obstacles, common ground must be expanded between the positivist approach of the ecological sciences and the dialectical approach common in the social sciences, so that a discourse can be refined to fully address conservation issues. The importance of furthering this discourse cannot be overestimated (Campbell, 1998: 292-296; Zimmerer and Young, 1998). All of these issues are examined in the literature review and the discussion chapter.

Furthering the discourse between the social and biological sciences requires, requires accepting that both cultures and environments are dynamic. An historical perspective is required to put contemporary issues into perspective (Campbell et. al., 1999: 38-39). An evolutionary view of ecology (Meffe and Carroll, 1997), sometimes referred to as "scientific ecology" (Zimmerer, 1994: 2-5) needs to be employed in planning. Ecosystem management takes this view of ecology and emphasizes maintaining critical ecological and evolutionary processes, adaptive and flexible management, minimizing external threats while maximizing external benefits, and moving beyond park boundaries. Of course, within such a management framework the human dimension is considered (Meffe and Carroll, 1997: 346-383, 385-417). The framework presented in this thesis embraces the same ecosystem management approach. However, it expands the role of context and the human dimension within the human/environment dynamic.

In order to understand this dynamic the contemporary situation in a study area **nust** be put in context. Incorporating a historical perspective and scientific ecology only **provide** part of this context. In order to understand the role of the human half of the

dynamic in conservation requires not only identifying the proximate causes of change but the indirect causes or the social driving forces as well (Stern et. al., 1992: 67-93). Studies of the human dimension to date do not tend to take social driving forces or historical circumstances into account (Gibson, 1999: 9-14). The result has often been static plans focused on the contemporary situation, examples of which are presented in the literature review and discussion chapters. The Contextual Framework for Wildlife Conservation presented in this thesis addresses the informational needs required for such adaptive planning.

Contextual Framework for Wildlife Conservation

The literature review will show that research into the human dimension when designing a conservation plan tends to be very basic. It commonly begins and ends with the identification of the proximate causes of wildlife diversity loss, then seeks to address those causes. The problem with this approach is that it so oversimplifies the human/environment dynamic as to minimize the impact of the conservation plan. That is, it produces static, inflexible plans focused exclusively on the here and now. The Contextual Framework, presented here, is designed to help gather the data needed to create a flexible, dynamic conservation plan that addresses the human/environment dynamic as thoroughly as possible. It does so by examining the present historical circumstances and assessing future needs. Moreover, the examination of the present circumstances goes well beyond the standard identification of the proximate causes of change into the driving forces behind those causes. The information gathered from these two perspectives allows the identification of socioeconomic, ecological, and sociocultural

trends that can be used to give the plan a longer-term perspective by helping determine where resources should be allocated in a conservation area. The Framework will be described in detail in chapter 4 and will flow from the data presented in the literature review. However, by way of introduction, figure 1 shows the relationship between the three main points of the Framework, which are discussed below.





Point A: Historical Perspective

Before one can understand the present condition and circumstances of a **conservation** area, one must first examine the historical events that created them **(Campbell et. al., 1999: 38-39), thus the need for an historical perspective. In the Framework, this first aspect is the Historical Perspective, Point A.** The relevant historical **circumstances will vary for each conservation area, as will the sources available to study them.** However, as many sources as possible should be examined to gain understanding **from** as many perspectives and at as many scales as possible. The purpose here is not to **write** a history of the study area in the Western sense but rather to gain insight into the **circumstances that resulted in the present socioeconomic and environmental conditions. This requires not only including the perspectives of historians and social scientists but ecologists and indigenous peoples as well.** Using sub-points and questions to help guide the **information gathering process, the general social and ecological trends that help explain** the contemporary cultural and ecological conditions should emerge.

Point B: Contemporary Social Driving Forces

The Historical Perspective should flow into the contemporary situation, which is **Point B**. Point B is also referred to as the Contemporary Social Driving Forces. To be **clear**, Point B does not de-emphasize the importance of the proximate causes of change **but rather** emphasizes the drivers of those causes. In *Global Environmental Change: Understanding the Human Dimensions* (Stern et. al., 1992), the authors explain the **concepts** of both proximate causes and social driving forces. They define proximate **causes** in anthropogenic terms as the immediate human action taking place that is seen as directly causing environmental change. Among these causes may be road building, land tenure, agriculture and ranching, and population pressure. These proximate causes can combine with an extensive (as opposed to intensive) land use system, common in Third World tropical countries, to help explain environmental concerns such as deforestation (Stern et. al., 1992: 67-75), which can translate into the loss of wildlife diversity.

Social driving forces, on the other hand, are defined as the complex of technological, economic, institutional, cultural, and environmental variables that normally act in conjunction and at various scales to influence the more readily identifiable proximate causes. Social driving forces, then, are the indirect causes of change. Unfortunately, because of their indirect nature, social forces are often hard to identify. These driving forces can include population growth, political and economic institutions, and belief systems (Stern et. al., 1992: 75-93). Notice that the controversial variable, population growth is listed as both a proximate cause and a social driving force. Of course, other variables may appear as either social driving forces or proximate causes as well, but, historically, population growth has held a rather unique position in the realm of causes. The population variable, and the mono-causal explanations that tend to accompany it, will be examined extensively in the literature review.

I will demonstrate in subsequent chapters that, while it is important to identify **both** proximate causes and social driving forces as completely as possible, particular **attention** needs to be paid to the latter. Identifying the proximate causes of change is **necessary** to accurately assess immediate levels of environmental impact from different **types** of human activity (Stern et. al., 1992: 92). On the other hand, to see a complete **Picture** of the human/environment dynamic and to fully address conservation issues

requires identifying the forces that are driving these proximate causes, as well. The reason for emphasizing social driving forces is that, as discussed above, because of their indirect nature they are often overlooked (Stern, et. al., 1992: 93-94). At best, ignoring the social driving forces at work in a conservation area will result in an oversimplification of a complex situation. At worst, it can result in an ecofalacy, in which observations at the macro level are erroneously used to explain micro level phenomenon. An example, that has occurred more than once, is the observation of rapid population growth occurring along side severe environmental degradation and, from this observation, assuming a cause and effect relationship (Campbell, 1996: 4-5).

Point C: Future Trends

Just as sub-points and questions will be offered to help with the information gathering at Point A, they will also be provided for Point B and Point C, the latter of which is also referred to as Future Trends. Likewise, just as the information gathered at Point A will flow into Point B, the information gathered at both these points should flow into Point C. Extrapolation into the future is problematic, particularly where socioeconomic trends are concerned, thus the need for flexibility in planning. However, some degree of prediction is necessary for planning into the future (Western, 1989b: 11-25). General trends should emerge from the information previously gathered that can help identify areas of need and the best allocation of resources to meet those needs.

Theoretical Perspective

The theoretical framework I used in developing the Conceptual Framework presented here is that of political ecology. Political ecology is a fairly recent development coming out of geography and anthropology, which is particularly suited to the type of interdisciplinary study called for in this thesis. It has the potential to yield additional insight into the causal process involved with the extinctions of native wildlife communities without making unwarranted assumptions due to statistical associations or coincidence (Campbell et. al., 1999; 8-10). Political ecology allows for the analysis of interactions encompassing a wide range of socioeconomic and biophysical variables, each having its own spatial and temporal characteristics (Campbell, 1996: 6-8; Campbell and Olson, 1991). Political ecology has its roots in Marxism and developed out of political economy and ecological analysis, identifying both society and nature as social constructs (Greenberg and Park, 1994: 1-8). In their seminal work, Land Degradation and Society, Blaikie and Brookfield present regional political ecology as an alternative approach to mono-causal explanations that employs "chains of causation" beginning at the scale of the specific and moving outward to the scale of the general in discussing issues of land degradation. Multiple perceptions, definitions, and rationales are used to develop "multiple and conditional hypotheses" which are grounded in case studies (Blaikie and Brookfield, 1987: 13-34). The fluid nature of political ecology is not only an advantage, it is essential (Greenberg and Park, 1994: 8).

In addition, Geography has the strongest tradition among the social sciences of studying people and the environment and is open to the exchange of ideas with other disciplines. In *Nature's Geography: New Lessons for Conservation in Developing*

Countries, Zimmerer and Young state that there is an "urgent need to join environmental management that is sound with economic development that is viable in the long term." To achieve this sustainable development requires a "combined focus on the biogeography and human ecology of environmental changes. Geography offers much to such understanding—with its core of human-environment relations, geography integrates various areas of research that are highly relevant" (Zimmerer and Young, 1998: 4).

Along with emphasizing the breadth of the discipline of Geography, the statement above reemphasizes the assertion at the beginning of this chapter that no one discipline can address the myriad issues facing modern conservation. One of the major criticisms of political ecology is that it lacks a genuine ecological component. (This criticism will be examined in the literature review.) Because of this gap in ecological understanding, the perspectives of the field of Conservation Biology were incorporated into my research to provide the ecological component to the Framework. Conservation biology is a relatively new field that developed largely as a response to the worldwide biodiversity crisis and is a synthetic discipline emphasizing the application of principles from the biological and social sciences, as well as the humanities, to the maintenance of biodiversity.

In practice, Conservation Biology is designed as a link between pure science and practical ecological management to address the most pressing conservation issues, such as wildlife extinction and ecosystem process maintenance. The addition of an evolutionary view of ecosystems, which brings a longer-term view to conservation, is arguably the discipline's most significant break with past approaches. Additionally, the interdisciplinary perspective emphasizes the need for understanding the human

dimension. Nature is not viewed by conservation biologists with a purely utilitarian eye nor is development seen as necessarily the antagonist of conservation. On the contrary, the idea of sustainable development, a mainstay of political ecology, is stressed in Conservation Biology as well (Western, 1989c: 31-36; Soulé, 1989: 297-303; Meffe and Carroll, 1997; Campa, 1999: personal communications). As with political ecology, Conservation Biology will be discussed further in the literature review.

Along with presenting the Framework in this thesis, I am also attempting to further the discourse between the biological and social sciences. With their openness to interdisciplinary cooperation, the disciplines of Conservation Biology and Geography are particularly suited to the development of the Contextual Framework and to furthering the discourse between disciplines needed to address conservation issues. The importance of furthering the type of cooperation called for by the Framework, with its emphasis on social driving forces and historical perspective, is well articulated by Western and Wright when they describe the situation facing wildlife worldwide:

Renewable-resource use and preservation have served the environment well, but neither approach has proved sufficient. Both often have fared badly in the face of population growth, poverty, and commercialism. At one extreme, international forces such as trade and economic incentives undermine conservation efforts. At the other, government indifference and incompetence—often intensified by commercial greed, nepotism, corruption, and local hostility—have swelled the tide of destruction. Finally, both utilization and preservation policies falter wherever land tenure and access rights are ill defined. The problem is most acute in areas where national policies deprive local communities of the right to use the resources on their own land. The resulting usversus-them rush to harvest is the root of resource depletion (Western and Wright, 1994: 4).

Chapter Outline

The literature review, chapter 2, builds on the themes presented here in the Introduction, which include: the need to further the interdisciplinary discourse to better address conservation issues and the obstacles to be overcome for its continued development by examining the pertinent social and biological literature. It also presents my research question and sets the stage for a full discussion of the Contextual Framework in the discussion chapter. The methodology, chapter 3, discusses the formulation of my research question and the development of the Framework, as well as presents my data sources and the study area I used to illustrate it. Chapter 4, the discussion, will present the Framework in detail, using a case study from Kajiado District Kenya to help illustrate it. In the conclusion, chapter 5, the previous chapters are summarized, the strengths and weaknesses of the Framework examined, and further issues regarding the integration of conservation and development are discussed.

Chapter 2

LITERATURE REVIEW: THE NEED FOR AND PROBLEMS WITH EXPANDING THE INTERDISCIPLINARY DISCOURSE ON CONSERVATION

...when the last individual of a race of living things breathes no more, another heaven and another earth must pass before such a one can be again.

-William Beebe

Introduction

In the previous chapter I emphasized the need to refine the interdisciplinary discourse between the biological and social sciences to understand the complex human/environment dynamic and address the problems faced by conservation today. I also introduced the Contextual Framework to aid in gathering the information required for flexible, comprehensive conservation planning in a study area. Within the Framework is emphasized the need for historical perspective, a general level of predictability, and especially the importance of identifying social driving forces. In the literature review, I will build on the foundation laid out in chapter 1 by examining literature pertinent to the human/environment dynamic.

In the first section, I will present ecological literature addressing conservation issues and illustrating the problems with the way the biological sciences view human society. In the second, I will review literature from the social sciences pertaining to people and the environment, demonstrate where ecological understanding is lacking, and establish further the usefulness of political ecology. These two sections will lead to the third section, which will examine the influence of and problems with the neo-Malthusian perspective when applied to human societies. It also offers an explanation why human population growth becomes virtually a mono-causal argument that oversimplifies multifaceted conservation issues. The last section will present my research question and objectives.

The Ecological Perspective

In Conservation Biology and Sustainable Societies: A Historical Perspective,

Meine writes:

There will always be those who insist on framing any and all environmental issues in terms of "people versus trees," "jobs versus the environment," "progress versus stagnation." But people are becoming increasingly aware of the fallacies, simplistic assumptions, and myopic historical perspectives that underlie such sentiments, and are searching for viable, workable alternatives that do not involve choosing the short-term evil of individual hardship or the long-term evil of environmental decline (Meine, 1992: 61).

In this passage, Meine states what most conservationists have realized—that protecting wildlife diversity is not an either or situation and that with an interdisciplinary approach, sustainability may be achieved (Meine, 1992: 45-61). The question is what do we need to know to understand the requirements of sustainability? Without a clear knowledge of the issues involved with the human/environment dynamic, how can we hope to offer effective answers to conservation questions? While wildlife managers might agree with Meine's statement, their understanding of the issues involved and, therefore, their approach to conservation varies.

In 1986 the Conservation 2100 conference was held at Rockefeller University in New York under the auspices of Wildlife Conservation International. The diversity of views presented at this conference were brought together in the 1989 book, *Conservation* for the Twenty-first Century (Western and Pearl, 1989). The contributors, each involved in conservation scientifically, financially, politically, philosophically, or practically, provided a wide range of approaches to the subject. One of the major themes throughout the book is that single remedy solutions to conservation could "exterminate as many species as habitat fragmentation and poaching" (Western, 1989a: xii). The need for public support and sustainable development were also emphasized. As Western says in the overview of the book:

The conservationist tends to anti-development in the belief that if wildlife is victim of humanity, further development is abhorrent. That view is too simple and ultimately futile, for if humanity is the sole threat to wildlife, it is also its only hope. The challenge is not to shun humanity, but to make conservation *and* development the twin criteria of human progress (Western, 1989a: xiii).

He points to the need to examine issues of poverty and social inequity and essentially denounces a strictly Malthusian worldview. He also discusses issues of scale, pointing out that what is happening in places like Africa is not isolated from what occurs in the West. He concludes the introduction with the admonition that if long-range views are not incorporated into conservation planning, urban and agricultural development will exclude the interests of nature (Western, 1989a: xi-xv).

Although every contribution to *Conservation for the Twenty-first Century* brings something important to the discourse on conservation, I will not examine each chapter individually. They all essentially follow or contradict the general themes outlined by Western above. Instead, I will summarize the chapters that pertain to issues related to the Contextual Framework and those that focus on Africa. I will begin with chapter 2, Population, Resources, and Environment in the Twenty-first Century, which was also written by David Western.

Western has spent his professional life working on conservation issues in East Africa and has contributed greatly to the ecological literature on this area. He is also a former director of the Kenya Wildlife Service (KWS). He states in the second chapter of Conservation for the Twenty-first Century that predicting the fate of nature in the next century in an increasingly humanized world requires predicting socioeconomic trends. Recognizing the difficulty of such an endeavor, he says that these predictions need not be extremely precise. They only need to point to risks, which will help focus research and help avoid crises. Achieving this perspective on the future of wildlife requires understanding the forces behind extinction, which Western lists as: habitat fragmentation and destruction, overkill, exotic species introductions, and chains of extinction. He emphasizes that these biological factors are not the only nor the ultimate factors involved here. Other factors such as global warming, pollution, and ozone depletion play a role as well. This list of proximate causes is lengthy and most causes ultimately stem from human activity. On the other hand, he is quick to point out that human activity can also be beneficial to wildlife communities and biodiversity. In the end, states Western, "humanity will be the arbiter of wildlife survival in the twenty-first century" (Western, 1989b: 11-13).

With these issues in mind, he argues, much in the same vein as Meine, that the people versus wildlife myth must be denounced and looks to the idea of sustainability, which is the basis of ecosystem management. This chapter examines different approaches to predicting long-term trends in population growth, resource use, welfare,

and environmentalism. He ends the chapter by linking the survival of wildlife with the striving for the improvement of human welfare. Essentially, the argument is that if we cannot care for ourselves, we will not care for other species (Western, 1989b: 13-25).

The problem with predicting long-term socioeconomic trends is that historically the random events that nullify these predictions tend to repeatedly occur. Stochastic events play at least as large a role in human culture as they do in the natural world. Once again though, he stresses, the predictions do not need to be exact to identify areas of risk and focus research. On the other hand, while distancing himself from the neo-Malthusians in the Overview, many of the methods Western discusses for predicting socioeconomic trends that could be used for these predictions employ the concept of carrying capacity, which is the heart and soul of neo-Malthusian thought (Western, 1989b: 14-23). I will save the discussion of the problems with applying carrying capacity to human society for the missed connections section of this chapter. In this section I present instances of neo-Malthusian thought only to point out its prevalence in ecological theory.

Finally, in the beginning of this chapter Western discusses the proximate causes listed above that threaten wildlife. While it is important to understand the proximate causes threatening native wildlife communities, I argue in chapter 4 that understanding the driving forces behind these causes, particularly when anthropogenic factors are involved, are at least as important to the future of wildlife (Western, 1989b: 12-14, 24-25).

The Conservation Realities section of Conservation for the Twenty-first Century examines the roles of human values, management planning, and the developed world in

conservation. Mary Pearl states a recurrent theme throughout the literature in the introduction to this section, The Human Side of Conservation, when she writes that the most difficult task facing wildlife managers is accommodating the needs of wildlife with those of the short-term economic needs of people. She argues that addressing the social and management requirements of this task at various levels of government requires a conservation minded international citizenry. One of the main objectives of such a citizenry is to examine the mores of diverse cultures and infuse them with environmental values. Though it is not explicitly stated, the implication is that this citizenry will be largely from the developed world and that the purpose of understanding other cultures is to ingrain a Western style conservation ethic in them (Pearl, 1989a: 221-225). This interpretation of the composition of this international citizenry and the role of cultural study is reinforced in her later chapter, How the Developed World Can Promote Conservation in Emerging Nations. In this later chapter, examples of how the West can help emerging nations are presented with no discussion of the complicity of the West in creating the problems occurring within emerging nations. Neither is there a discussion of the problems that hamper conservation efforts in the West itself, which are examined below (Pearl, 1989b: 274-283).

The chapters that follow Pearl's introduction to the *Human Values* section of *Conservation Realities* deal with conservation in the United States. Their importance to the present discussion is that they emphasize the problem with the proposed makeup of the international citizenry discussed above. Norton writes in chapter 23, *The Cultural Approach to Conservation Biology*, that the debate between the intrinsic and instrumental value of nature should be rejected. The problem with American society is the arrogance

and cultural perversion that reduces all things, including wildlife, to consumer values (Norton, 1998: 241-246). In the following chapter, *Hard Times for Diversity*, Ehrenfeld adds that Western culture in general mitigates against a conservation ethic because it fails to value diversity. He continues that it seems unlikely that we would strive to conserve that which we do not value (Ehrenfeld 1989: 247-250). The situation depicted by these two researchers does not augur well for the formation of Pearl's international citizenry, lead by the industrialized world, solving the Third World's conservation problems. Clearly the West has its own issues to address, many of which directly impact the Third World. I will return to the problems with this manipulative approach to cultural studies and paternalistic approach to conservation below.

Two more contributions in *The Role of Planning* Section that follows *Human Values* are important to this discussion. The first is entitled, *Overview: A Planner's Perspective* (1989) by Perez Olindo, who is a former director of the Wildlife Department in Kenya. A self-described preservationist in the past, Olindo now praises the shift in wildlife management toward an approach that takes in the human aspect. He writes, however, that he does not see the adequate involvement of economists, politicians, and planners in conservation planning. In his opinion, the idea of forming conservation efforts independent of human valuation and societal parameters is not viable in his culture (Olindo, 1989: 222, 251-253). Implied in this statement is the idea that any action taken by the West that does not take cultural values into consideration is unlikely to succeed. One need only look to the outcome of the Green Revolution in places like Kenya to see the perils of such an oversight (Western, 1989b: 20). Additionally, it will take more than economists and politicians to fully achieve the management approach of which Olindo speaks, as geographers, anthropologists, and sociologists can also provide insight.

The other contribution in this section is by another Kenyan, Reuben Olembo and is entitled, International Perspectives in Conservation Planning (Olembo, 1989). Once again, Olembo emphasizes the need to understand human behavior for effective management planning. He repeats that to achieve sustainable development, a balance must be struck between socioeconomic needs and the needs of natural systems. Priorities must be set based on an understanding of these needs. He also looks at issues of scale in relation to effective management. While Olembo makes several good points in this chapter, he has two major problems. First, while he says environmental problems are seldom due to a single cause and occur at different scales, he offers for consideration only the national and international scales (Olembo, 1989: 261-269). However, most of the costs of wildlife conservation in terms of land set aside for parks and reserves, crop damage, livestock loss, and even sometimes loss of life are borne at the local level. National and local interests are not necessarily the same. Further, not just most environmental problems but all environmental problems are the result of diverse issues, and I argue that those with anthropogenic origins can only be addressed by the study of social driving forces, which occur at all scales. The second problem, which deals with communal versus open access land, I will deal with in the missed connections section of this chapter. This problem centers on the concept of a global commons, which is viewed in terms of Hardin's The Tragedy of the Commons and the difference between open access and a true commons (Olembo, 1989: 267-269).

Western, along with Wright, edited another volume that deals with conservation issues and the human dimension, *Natural Connections: Perspectives in Communitybased Conservation* (Western and Wright, 1994). As the title implies, this volume deals with "experiments" in community participation in wildlife and resource management throughout the world. The idea of community participation in conservation is as hard to define as sustainability or social driving forces themselves. Essentially, it is an attempt to enable those at the local level who bear most of the cost of wildlife and environmental management to share in its care and benefits. The topic of community-based participation in conservation is a research project unto itself. Since participation is not the focus of my research but, rather, another example of an attempt to affect the human/environment dynamic for the purposes of conservation, I will not attempt to make a more succinct definition here. Western claims any attempt to define the term too narrowly is "futile and even counterproductive" (Western and Wright, 1994: 8).

The first chapter of the book, *The Background to Community-based Conservation*, examines the origins of this management philosophy and defines the concept in, as indicated above, the most general terms. In essence, this conservation approach is a way of putting the ideas presented in *Conservation for the Twenty-first Century* into practice. One of the most important points the authors make is that even the largest parks are not sufficient in size to insure the long-term survival of many species, and, as a result, there is the need to promote conservation in rural lands beyond park boundaries. Community-based conservation (CBC) is an attempt to address this need and grew out of the recognition of real environmental threats (beginning in the 1960s), the grass-roots approach to development (1950s), and the human rights and indigenous peoples

movements (1960s). The major change from previous management strategies is that community-based conservation is bottom, rather than top driven. The authors note enormous obstacles to be overcome for this "experiment" to succeed. These obstacles include cultural, political, institutional, and economic factors, which operate at various scales through time. This list, which could easily have come from a political ecology perspective, underlines the need to understand social driving forces and the need for an historical perspective, especially for conservation to be successful outside protected areas (Western and Wright, 1994: 1-10).

The book is broken into four sections. The first two sections present case studies of community-based conservation from around the world. The third examines themes that arise from these case studies. The final section presents the conclusions derived from the previous sections as discussed at the Airlie House workshop. As with the previously discussed volume, each author's contribution to this book discusses important conservation issues. However, it is not necessary to discuss each one individually. I will examine the case study from Amboseli in Kenya from the first section for two reasons. First, it is pertinent to my study area. Second, Amboseli is considered an important test case in CBC. Additionally, I will include two other writings from additional sources pertaining to this case study to help elucidate the issues presented in it. From the third section of the book, I will examine a contribution that further illustrates the preeminence of the neo-Malthusian approach in the ecological community and the problems with employing it to find general themes throughout the case studies. From the fourth section, I will examine the lack of consensus that came out of the Airlie House workshop.

In Ecosystem Conservation and Rural Development: The Case of Amboseli,

Western presents a CBC case study from Kajiado District in southern Kenya. During the 1960s and 1970s, Amboseli was the most controversial of the parks or reserves in the country. Because of the degree of human/wildlife conflict, the area became a test case in integrated conservation and development and impacted policy not only in Kenya but also in other African countries including Zimbabwe, Namibia, and Zambia as well. The area in and around the park, known as Maasailand, has been home to pastoral peoples for over 3000 years and for the past 400 to 500 years to Maasai herders. The herders shadowed the migratory species and experienced no real conflict with wildlife until after the arrival of Europeans. Prior to the loss of land to farmers and wildlife preserves during the colonial period and in the post-independence period, the Maasai attitude toward wildlife was benign. Wildlife was seen as "second cattle" to be relied on during times of environmental hardship. With their marginalization however, the Maasai became more antagonistic toward wildlife as competition for scarce resources increased. As a result, human/wildlife conflict has risen steadily over the years (Western, 1994a: 15-23).

Given this setting, Western's goal was to find a management solution that satisfied both the Maasai and preserved wildlife. His approach was in opposition to the protectionist ethos prevalent at the time, which sought to exclude people from pristine natural settings. In Amboseli, which was the last important wildlife area in Kenya still occupied by humans, herders were largely blamed for the habitat degradation that was occurring. Western argues though, that blaming the Maasai had more to do with the mechanistic view of nature held by protectionists than what was really happening. The fact is, he says, that wilderness does not exist in East Africa. Pristine natural settings

untouched by humans are not to be found. Furthermore, ignoring the fact that humans have been part of the natural processes of the region for thousands of years can result in the protectionist approach causing more harm than good (Western, 1994a: 18-19). The volume, *Uncommon Ground: Rethinking the Human Place in Nature* (1996), edited by William Cronon, also debunks the myth of pristine nature and supports Western's observations.

This symbiotic relationship between pastoralists and their environment is expanded on in Western and Gichohi's 1993 paper, Segregation Effects and the Impoverishment of Savanna Parks: The Case for Ecosystem Viability Analysis.

Evidence is presented in the paper that supports the idea that not only are herders part of the natural landscape in East Africa but herding activities are beneficial, if not integral, to the health of savanna ecosystems by helping maintain the natural stages of grassland succession. Excluding humans from conservation areas, in this case, is actually detrimental to conserving diversity (Western and Gichohi, 1993: 269-281).

Understanding the relationship between the Maasai and their environment and the need to include them in conservation efforts was one thing, actually achieving a CBC approach was quite another. The task required overcoming the antagonistic attitude of the Maasai toward wildlife, born of conflict, and their distrust of the government, born of colonial and post-independence land grabs. To meet this task, the conservation plan used research showing the importance of the Amboseli Basin's highly diverse ecology, seasonal wildlife migration patterns, and the Maasai's interaction with wildlife. Maasai culture, including its views of nature and history were also considered. Western felt that the pastoral economy of the Maasai would eventually collapse, largely due to population
increase from in-migration and natural increase, and that they would have no alternative but to diversify their economy. Based on a land use study, it was determined that the only viable economic alternative to herding was ecotourism, which had shown substantial actual and potential economic returns. The CBC plan itself grew out of these studies and through consultation with Maasai elders (Western, 1994a: 22-29).

When the plan was first presented, it met with favor from neither the Maasai, who still feared land annexation, nor the conservationist community, who distrusted the CBC approach. Tensions escalated until in 1971 the Kenyan government set aside an unspecified section of the Amboseli basin for wildlife. Even though they were to be compensated, the Maasai were outraged and retaliated by slaughtering wildlife. Clearly, Western notes, while the government could pass legislation to protect wildlife, its actual fate lay squarely in the hands of local people. Western's efforts in conjunction with the Ministry of Livestock Development and the World Bank's program to develop Kenyan rangelands brought about a compromise once the link between landowner income and conservation became obvious. These efforts at the national and international levels operated in tandem with continued efforts to improve the Maasai attitude toward wildlife by demonstrating its economic benefits. As these benefits began to be realized locally, poaching levels dropped. The first phase of the plan was implemented between 1977 and 1981 (Western, 1994a: 28-37).

While there were successes in the first phase, such as the lowered incidence of poaching, the increase in total biomass in Amboseli, and the policy impact of the CBC project throughout Kenya and Africa, several shortcomings are also noted. The foremost was at the national level, with the failure of the government to keep their part of the

bargain in terms of access to water and the use of revenues in ways unacceptable to the Maasai, on which he does not elaborate. On the international scene, a drop off in the tourist market ensued due to the 1970s energy crisis, impacting the Kenyan economy. While this development was not a shortcoming, per say, it did serve to help increase tensions. Locally, the Maasai were unwilling to initiate wildlife income diversification and community wide involvement was stifled by the domination of a few influential individuals. Additionally, Western blames national, district, and local problems with patronage, nepotism, corruption, as well as antipathy toward local involvement by the Wildlife Conservation and Management Department (WCMD) for the lack of success in the initial phase of the program (Western, 1994a: 36-32).

The second phase of the Amboseli CBC program (1982-1987) tried to include a broader spectrum of the Maasai community by the use of "self-help conservation programs" which gave locals a more active hand in diversifying their economy. Western argues the success of this approach is shown by the fact that while poaching was rampant and depleted wildlife throughout the rest of Kenya during this period, Amboseli and Maasai Mara (which was managed in a similar fashion) saw increases in wildlife numbers. On the other hand, the same sorts of problems such as corruption and patronage politics that plagued the first phase also plagued the second (Western, 1994a: 39-42). It was not until the third phase of the project (1987-1992) that the successes began to outweigh the failures. Among these changes responsible for this shift were the replacement of the corrupt and poorly funded WCMD with the KWS, the implementation of a national revenue sharing plan (reinforcing the local participation policy), and

renewed dialogue with the four group ranches surrounding Amboseli, which increased community involvement (Western, 1994a: 42-44).

In quantitative and qualitative evaluation of the CBC program in Amboseli (1977-1992), Western emphasizes the ecological successes: the ecosystem remained open, wildlife populations were healthy, and migrations continued relatively unhampered. Also, while the Maasai received a less than equitable distribution of cost to benefits, some success has been achieved among them as well. Generally, their attitude toward wildlife became less antagonistic and the wildlife economy was integrated into the overall Maasai economy. That benefits were gained, Western feels, is more important to the future of wildlife than whether or not those gains outweighed the costs (Western, 1994a: 44-47). Further, community programs in both Amboseli and Massai Mara were more effective in curbing poaching than law enforcement was in the rest of Kenya, thus reducing the need for enforcement and lowering management costs (Western, 1994a: 48).

The biggest failure in the program, according to Western, occurs at the national governmental and institutional levels where colonial preservationist policies and paternalistic attitudes toward pastoralists remain. Other problems included a lack of widespread participation among the Maasai at the local level, and corruption, nepotism, and patronage at all levels. However, without the program, Western stresses, the situation in Amboseli would be much worse. The greatest challenge for the future of Amboseli, in his view, is a recurrent theme throughout the literature. It is to accommodate the cultural, economic, and political transitions occurring in Maasailand into well-balanced land use planning that includes the needs of wildlife (Western, 1994a: 44-50). As he writes in, *In the Dust of Kilimanjaro*, a recent, mostly anecdotal work

based on his career, "for wildlife to survive in independent Africa, it must become an asset to the African first and foremost," (Western, 1997: 50).

While his efforts (along with those working with him) to make CBC a reality in Amboseli were valiant, provided a lot of useful data, and were in many ways successful, Campbell suggests there may be two additional issues not listed above hampering the program's long-term success. The first is the shifting sociocultural makeup of Maasailand itself. The second has to do with the involvement and nature of nongovernmental organizations (NGOs) in conservation programs (Campbell, 1999, 2000: personal communication), which can be applied beyond Amboseli as will be explained below.

Taking into account the way local people view nature and wildlife is essential to establishing a dialogue between groups, let alone implementing a bottom up conservation program like CBC, which Western clearly understood. In fact, William Cronon edited an entire volume examining the subjectivity and fluidity of the way different groups and individuals within groups define nature (Cronon, 1996). Herein may lie the problem, according to Campbell. He states that the cultural complexion of Kajiado has changed considerably since the 1970s and the Maasai are not the only group that must be considered for a CBC program to be successful (Campbell, 1999, 2000: personal communication; Campbell et. al., 2000: 1-11). I will address this issue further in the next section.

The second concern is illustrated by the history of NGO evolvement in CBC in Africa. Several internationally prominent NGOs including the World Wildlife Fund (WWF), the Nature Conservancy (NC), and the World Resources Institute (WRI), with

funding from The United States Agency for International Development (USAID), formed the Biodiversity Support Program in the 1980s. In 1993 the program published, *African Biodiversity: Foundation for the Future—A Framework for Integrating Biodiversity Conservation and Sustainable Development*. The document presents a framework for implementing community-based conservation programs in the first two chapters. The remaining six chapters are devoted to discussing the critical aspects of conservation in sub-Saharan Africa that support this framework (Biodiversity Support Program, 1993).

Many of the ideas presented in *African Biodiversity* resonate with those presented in *Natural Connections* and *Conservation for the Twenty-first Century*. The most important of these ideas reiterates the multi-faceted nature of conservation issues and that population growth is but one factor and not the ultimate or even the most important cause of biodiversity loss. Issues of scale and social driving forces (though they are not directly referred to as such) are also introduced, as is the unique nature of each conservation case (Salau, 1993: 16-18). An entire chapter is devoted to the importance of understanding people's varying perceptions of nature, another to the value of indigenous knowledge, and another to importance of education in conservation (Biodiversity Support Program, 1993: 47- 55, 57-6, 111-117).

Now, however, with the new ecoregion approach to conservation that has prevailed in the WWF in the past couple of years, CBC has been largely abandoned in this NGO and a return to a more preservationist approach has been embraced (Campbell, 1999: personal communications). A likely reason for this philosophical reversal is that a CBC approach is a long-term solution and positive results were not coming fast enough to meet their short-term goals (Campbell 2000: personal communications). This same

criticism was leveled at NGOs in general by Terborgh, who states that by their very nature NGOs are too occupied with fund raising to be effective in furthering conservation goals (Terborgh, 1999: 3-9). If donations are based on short-term results, then the shortterm versus long-term explanation for the return to a preservationist position is supported.

What has occurred with WWF attitude toward CBC is not universal among conservation NGOs. In *Site Conservation Planning: A Framework for Developing and Measuring the Impact of Effective Biodiversity Conservation Strategies*, published by the NC, which, as noted above, was another member of the Biodiversity Support Program, still emphasizes the importance of local participation and understanding. However, the importance of social driving forces noted in African Biodiversity is down played. Their conservation goal is to:

Identify the most proximate sources (e.g. incompatible timber harvest) rather than ultimate sources (e.g. human population growth), as sources that are several steps removed from the impact on targets will not bring us to realize direct, feasible conservation strategies (Nature Conservancy, 2000: 10).

This goal clearly emphasizes the short-term over the long-term. What is being advocated is a static view of and approach to conservation problems, which seems to prevail throughout the literature. Note also that human population growth is once again elevated to an ultimate cause in direct contrast to what was said in *African Biodiversity* (Nature Conservancy, 2000: 1-16).

The Amboseli case study and the appended sources clearly demonstrate the problems involved in implementing a successful long-term CBC program. Although each study presented in *Natural Connections* has its own set of unique circumstances, the social misconceptions and obstacles illustrated in the Amboseli case are generally reflected throughout and demonstrate the need for enriched socicocultural understanding.

Actually, the emphasis on mono-causal explanations and short-term approaches among NGOs is not surprising given the conflicting information coming out of the scientific community. In the third section of *Natural Connections*, where the various themes running through the case studies are connected, one chapter stands out and illustrates the problems with the way the ecological community tends to approach cultural questions, as well as the problem with the way social scientists tend to use ecological concepts. The latter issue will be taken up at length in the next section. In chapter 20, *Ecological Limits and Opportunities for Community-based Conservation*, Salafsky states that:

inal:

There is a fundamental tension between the processes of biodiversity conservation and human development...The strict preservation of natural ecosystems essentially requires that humans be excluded from the system...Having worked as both a tropical forest ecologist and a rural village economist, I can attest that there is thus a certain personal and professional schizophrenia involved in simultaneously trying to do both conservation and development work (Salafsky, 1994: 448).

The internal conflict described in this quote stands in stark contrast to the integrated approach advocated by Western and Wright at the beginning of this volume where development and conservation go hand in hand.

Salafsky criticizes the development sector for co-opting the concept of biodiversity without a strong ecological understanding of it and the conservation community for embracing the concept of sustainable development with an equal lack of understanding. In his view, both sides ignore "the deep underlying threat of ecological collapse latent in the ticking time bombs of human population growth and expanding consumerism" (Salafsky, 1994: 448-449). It is only through addressing these time bombs that the CBC approach, which he feels (as most seem to) is the only option for long-term conservation, can succeed. To illustrate his views he presents an extremely simplistic economic and ecological model for understanding the role of ecology in CBC. Unfortunately, he relies heavily on the work of Hardin and Ehrlich (examined in the missed connections section of this chapter) and emphasizes the role of human population growth almost to the exclusion of all other factors. In essence, he essentially substitutes the concept of carrying capacity for sustainable use and criticizes other contributors for not doing the same (Salafsky, 1994: 448-469).

Salafsky's views are unabashedly neo-Malthusian and, therefore, offer a monocausal approach (emphasizing carrying capacity and population growth) to conservation problems. Ironically though, he claims to understand the issues involved are multifaceted in nature. No wonder he describes the situation as schizophrenic. Returning to the Amboseli case, population growth was but one of many issues involved with the conservation problems of the area. In fact, Western does not even list population growth among the reasons for the problems that occurred with the program. Issues like governmental corruption and patronage politics have more to do with socioeconomic factors than straight demographic numbers and preservationist ideas are of little use in an area rich in wildlife diversity but with no "pristine wilderness" to preserve. While this single factor approach fits nicely into Salafsky's model, it fails to account for the myriad of other issues involved and is therefore too simplistic. Even rampant consumerism, which is indeed an important factor that needs to be addressed particularly in the West, seems minor next to population growth in his view.

Salafsky's chapter sets the stage for the conclusions in the fourth section of the book, which examines the outcome of the Airlie House Community-based Conservation Workshop. Wright best sums up the results of the workshop when he says:

We found the issue of partnerships between communities and conservationists too new, the views too varied, the time too short, and the need for learning still too great for a tidy set of simple answers (Wright, 1994: 524).

Western adds that the only consensus was that local involvement is essential to longterm, non-coercive conservation (Western, 1994c: 499-511).

Salafsky's views tend to be the rule instead of the exception among the ecological community. In Analyzing the Demographic Trap (1987) Brown attempts to integrate ecology and economics to understand the human/environment dynamic in terms of land degradation and diversity loss. In the paper, he develops a model of what he calls the demographic trap, which is based on Notestien's model of demographic transition. Brown's model consists of three transitional stages of social development: (1) a preindustrial stage where both birth and death rates are high, (2) an industrializing stage where expanding food production and improved public health bring about a drop in mortality while fecundity remains high, and (3) a post-industrial stage where economic and social gains conspire to bring birth and death rates into equilibrium. That Notestien's model is outdated is irrelevant, since it is Brown's model we are really concerned with here. According to Brown, Third World nations are failing to make the transition to the third stage and remaining in the second stage due to overpopulation. The result of this failure is increasing environmental degradation, which could eventually lead to the regression of these nations back to the first stage, which is the demographic trap (Brown, 1987: 20-37)

This model is another overly simplistic articulation of the neo-Malthusian perspective, which emphasizes limits to growth and the environmental hazards of overpopulation. Throughout the paper, Brown stresses the importance of carrying capacity to both environmental and developmental issues. As with Salafsky, he does claim to recognize the multifaceted nature of the human/environment dynamic. He also recognizes the need for an interdisciplinary approach to solving environmental problems. Moreover, despite the fact he chose an outdated model of social development on which to base his model, Brown seems aware that historical circumstances and questions of poverty and marginality play a role in environmental problems and need to be addressed as well (Brown, 1983: 20-37). However, he, like Salsfsky, concentrates on human population growth to the near exclusion of all other factors, making it essentially the prime (and one might argue the only) factor involved with environmental problems, such as wildlife diversity loss (Brown, 1983: 20-37).

In effect, this mono-casual approach elevates a proximate cause to the level of an ultimate cause. Yet ironically, Brown himself warns against making the assumption of a direct cause and effect relationship between population growth and environmental degradation. Similarly, he suggests the wedding of ecology and economics as the perfect interdisciplinary match for understanding environmental problems (Brown, 1983: 20-37), ignoring the fact that much of the human dimension cannot be reduced to dollars and cents. Economics is but one of the social sciences and alone is not sufficient to address all the cultural issues involved in the complicated human/environment dynamic. I will revisit this issue in the following section of this chapter.

Terborgh is another ecologist who recognizes a multitude of factors involved in human/wildlife interactions and yet focuses almost strictly on the population factor in offering analysis and solutions. In *Requiem for Nature*, Terborgh devotes several chapters to the human dimension and in the first chapter discusses the need for a completely new approach to conservation (Terbrogh, 1999: 1-9). Like Brown and Salafsky, he recognizes that poverty, marginalization, social inequity, and governmental corruption all play a role in issues like wildlife diversity loss. Specifically, as stated in chapter 1, he lists the greatest threats to conservation as: "over population, inequities of power and wealth, exhaustion of natural resources, corruption, lawlessness, poverty, and social unrest" (Terborgh 1999: 17). Notice that while population is first on the list, it is not the only factor listed. It is also interesting that consumerism, which can drive a number of these other threats, is not listed at all as it was with Salafsky. Terborgh goes on to say that conservation success requires progress on scientific, economic, social, and political fronts. Sustainable development is essential to the long-term conservation of species. He also argues that conservation must move beyond parks and calls for a redesign of international conservation strategy (Terborgh 1999: 17-22).

Despite his apparent understanding of human dimension issues, Terborgh still takes a decidedly neo-Malthusian approach to conservation. In chapter eight, after discussing the numerous social and economic forces involved in deforestation, he concentrates on population growth as the main problem (Terborgh 1999: 121-140). In the following chapter, the need for sustainable development and a stable land use system are emphasized, as well as the obstacles to that stability including "crushing" poverty, social inequity, and political instability. Yet, the first step he offers for stabilizing land

use is to stabilize human population growth (Terborgh 1999: 141-160), which does not address the issues he himself presents. In the end, a new approach to conservation never materializes and Terborgh's solutions to the problems facing it amount to little more than stronger birth control programs and stricter enforcement of national park policies (Terborgh 1999: 93-148). This seems to be another example of the schizophrenia of which Salafsky writes.

Two themes emerge from the preceding review of the ecological literature. The first is that ecologists tend to take a static, and hence a too simplistic, view of human culture. This view manifests itself in overly generalized models, an often paternalistic view of Third World nations and indigenous peoples, and an almost single minded focus on the present when forming conservation plans. However, without a clear understanding that cultures are dynamic, that social driving forces propel the more readily identifiable proximate causes, and that historical circumstances also play a role in problems like wildlife depletion, an understanding of the human/environment dynamic will remain elusive. This first theme will be addressed in the following section. The second theme is the prevalence of the neo-Malthusian approach in ecological thought. It is hard to conceive how anything other than confusion can result from trying to apply a monocausal approach to a multifaceted issue like conservation. This second theme will, once again, be discussed in the missed connections section of this chapter.

The Sociocultural Perspective

[W] ildlife offers significant benefits to a wide variety of individuals and groups in Africa. The struggle to control its value, in which many people continue to risk their lives, makes wildlife an appropriate object of inquiry for the social scientist.

- Clark C. Gibson

In the preceding section, I presented a survey of the ecological literature related to the human dimension in conservation, concentrating on East Africa and Kenya whenever possible. While this review is by no means exhaustive, it illustrates some of the problems and misconceptions among biological scientists about the social dimension. In this section, I will deal with the first of two main themes that emerged from the ecological literature review. That theme is the static and simplistic view of culture often held by ecologists. By presenting pertinent sociocultural literature, I will establish the need for the kind of cultural understanding that the study of social driving forces and historical circumstances can bring to conservation planning. Likewise, the need to employ the framework of political ecology to achieve this understanding will be established. In addition, I will also show where the social sciences lack ecological understanding and why this deficiency needs to be corrected.

Various perspectives are available to social scientists that study people and the environment, although real ecological study, including wildlife study, has been largely ignored by the social sciences until recently (Gibson, 1999: 5). Some ecologists, including Brown and Salasfsky (discussed above) advocate and employ an economic approach to understanding the human dimension in conservation. Brown argues that understanding human development trends requires understanding economics and

ecology, particularly in terms of the concept of carrying capacity (Brown, 1987: 24-27), and Salafsky is himself a rural village economist as well as a tropical forest ecologist (Salafsky, 1994: 448). The integration of economics and ecology is not favored by all ecologists though. Terborgh says that when "economics rules, most tropical forests are worth more dead than alive" (Terborgh 1999: 18), making the point that nature is often undervalued and seen as an externality. In any case, economic theory is incorporated into many studies of the human dimension.

A recent addition to the political economy literature, *Politicians and Poachers: The Political Economy of Wildlife Policy in Africa* (Gibson, 1999), examines conservation issues in three African countries Zambia, Kenya, and Zimbabwe. In this study, Gibson argues that since wildlife is an important resource both politically and economically in all three countries, groups and individuals strive to shape policy that procures its benefits for their own ends. The relationship between policy and wildlife has not been adequately studied, according to Gibson. Part of the reason for this oversight, he says, is that social scientists have largely ignored African wildlife as an area of study and have tended to focus on development issues. Those "human dimension" studies that have taken place, he criticizes for presenting a too simplistic view of the political situation in Africa. Specifically, he states that these studies lack a full accounting of wildlife policy and, while prescribing legislative changes at the national level, generally do not examine the legislative institutions that will make these changes or the political consequences of the changes themselves (Gibson 1999: 1-9).

Furthermore, Gibson challenges as untenable the assumption that conservation is the purpose of wildlife policy in these countries. He argues to the contrary that

conservation policy is characterized by conflict and should be studied within a political framework as the interaction of individuals and institutions. In this study, he adopts the theory and methodology of new institutionalism because its analytical focus is individuals, their preferences, and institutions. A main assumption of this approach is that rational, self-interested individuals strive to gain preferred outcomes by the structuring of institutions. The role of institutions in this scenario is to reduce the uncertainty among individuals to prevent suboptimal outcomes. New institutionalism relies heavily on economic theory, particularly principal-agent theory. Additionally, the distributive nature of institutions is incorporated into the analysis, in order to avoid the institution-as-remedy view often associated with this approach. Recognizing that issues of scale are involved, Gibson looks at multiple political levels in his analysis namely, the legislative, bureaucratic, and local levels (Gibson, 1999: 1-18).

Four empirical questions are examined in this book: (1) Why did the governments in Zambia, Kenya, and Zimbabwe keep colonial wildlife laws intact after independence? (2) Why did the President of each country respond differently to poaching? (3) Why did wildlife agencies, particularly in Zambia and Kenya create bureaucracies in the 1980s that inhibited conservation efforts? (4) Why did the programs created by these agencies fail to curtail local small-scale illegal hunting? Gibson finds that the answers to all these questions lie in the political climate of each country (Gibson, 1999: 153-164).

Gibson answers the first question by pointing out that, although local outrage at exclusionary wildlife laws was used in native campaigns against white rule in each case, the initial independent governments found the discretionary power of the status quo

useful in the patronage politics that developed. Not until the political climate changed and parliamentarians (MPs) became more directly answerable to constituents did the widespread antipathy toward wildlife become reflected in national policy (Gibson, 1999: 21-79).

The answer to the second question about the differing presidential responses to poaching in Zambia is that the expansion of the international wildlife market combined with an economic crisis to make poaching increasingly lucrative. Ironically, the formation of the one-party state, which tied the MPs to their constituents, as mentioned above, actually made the conservation minded Zambian president less effective in dealing with the poaching crisis. In Kenya, the discretionary powers of the status quo provided no incentive to address poaching until the valuable tourist industry was threatened. On the other hand, Zimbabwe saw much less poaching because it never developed the extensive patronage systems found in Kenya and Zambia. Additionally, bureaucratic oversight held down the corruption in the wildlife department, and the economy did not falter (Gibson, 1999: 21-79).

The answer to the third question about bureaucratic inhibition of conservation efforts, according to Gibson, is that wildlife agencies were more concerned with securing control over the fate of wildlife than its conservation. It is a common misconception that conservation policy in Africa is always for the benefit of wildlife. In Kenya and Zambia, due to the prevalence of patronage politics, control over wildlife involved courting presidential favor in one form or another. This capricious approach hampered conservation measures in both countries. Zimbabwe, on the other hand, because of its

institutional makeup was able create more efficient conservation programs (Gibson, 1999: 83-116).

The fourth question about the failure of agencies to curtail illegal hunting addresses the outcome of conservation programs at the local level. The problems of local people were similar in all three countries, and the following outcome generally applies to each case. The approach taken by wildlife agencies was economic, providing incentives to persuade local people to tolerate wildlife. Unfortunately, benefits were provided to both hunter and non-hunter alike and a free rider problem ensued, where individuals benefited from the program whether they behaved appropriately or not. The main change was that increased enforcement made poachers select smaller animals and switch from firearms to snares as their primary form of hunting. Much of the problem lay in the fact that bureaucrats were reluctant to undercut their own authority and failed to recognize the importance of local political institutions (Gibson, 1999: 154-160).

The themes that run through this study are that wildlife is of political importance, that political institutions shape wildlife policy, and that understanding political struggles is central to explaining that policy. The importance of this study lies in the addition of a political dimension, which goes beyond straight economic explanations, to the study of wildlife conservation in Africa. However, while Gibson provides a wealth of information on the political dimensions of African wildlife policy and presents cogent arguments for social scientists to study wildlife, he nonetheless does not provide a complete sociocultural picture. Despite the political dimension, economic theory plays an important role in his approach to wildlife study. Certain assumptions of economic theory incorporated into new institutional theory can potentially result in the same sort of overly

simplistic views of the sociocultural dimension for which Gibson chastises earlier human dimension studies (Gibson, 1999: 1-18).

An example of this potential problem is the assumption of the rational individual acting in his own self-interest (Gibson 1999: 9-14). The rationale of this assumption lies in a largely Western, capitalistic perspective that does not necessarily apply to preindustrial or industrializing nations or tribal peoples. At issue is the standard by which rationality is to be measured. Anthropologists and some geographers argue that rationality is as culturally bound as people's perceptions of nature (Cronon, 1996: 23-56; Sahlins, 1976: 55-125).

The rejection by the Maasai of a potential campground near Amboseli National Park can be viewed as completely irrational in economic terms. From an economic standpoint, the construction of this potentially lucrative tourist draw makes perfect sense. To the Maasai, however, this campground was culturally unacceptable and its rejection, therefore, rational (Western, 1994a: 36-39). Rationality, then, lies largely in your cultural viewpoint. Other aspects of culture such as values and mores are at least as important as economics and have a profound influence on community politics and institutions. Given the importance of the local level to conservation, which was established in the previous section, and the fact that societies are dynamic, it is also important to understand the historical and contemporary influences on these aspects of societies. While Gibson does examine some of these influences, he does so to a very limited extent. In making unwarranted assumptions and oversimplifying cultural issues, even social scientists risk offering shallow explanations for complex problems.

Scale is also another problem with Gibson's study. As stated above, he examines institutions and politics at the legislative, bureaucratic, and local levels, but he bases most of his conclusions on the first two. Gibson's own results show that despite the efforts of the legislative and bureaucratic levels, the ultimate success of any conservation program and, therefore, the long-term viability of wildlife lies squarely with local peoples (Gibson 1999: 119-152). It follows, then, that a better understanding of local level politics and institutions is warranted. Furthermore, in non-Western countries with strong tribal traditions, such study is likely to provide insight into the workings of higher level politics. Also, while this study has a regional aspect with the comparison of the three Sub-Saharan African countries, the role of international politics and institutions is largely ignored. The impact of such outside forces should not be ignored anymore than local level forces if important factors like social driving forces are to be examined.

The framework of political ecology has the potential to overcome both these problems of oversimplification and scale. Political ecology allows for the examination of chains of causation moving from the specific or local to the general or global. Its adaptable nature allows for multi-scale, multi-variable, multi-temporal analysis and invites interdisciplinary cooperation. Political ecology incorporates the important economic, political, and institutional aspects of culture as well as allowing for the incorporation of other variables, such as local traditional values (Blaikie and Brookfield, 1987: 13-34; Campbell and Olson, 1991; Greenberg and Park, 1994: 1-8; Campbell, 1996: 6-8). However, in spite of, and in some ways due to, its versatility specific criticisms have been leveled at this approach.

In Land Degradation and Society (1987), Blaikie and Brookfield present the framework of regional political ecology in a coherent format for the first time. The problem with the approach, it has been argued, is that it lacks any real ecological aspect. as understood in the biological sciences, as well as scientific rigor (Vandermeer, 1994: 5-7; Whitesell, 1994: 1-2; Walker, 2000: personal communication). The role of scientific ecology within the framework is debated by political ecologists and played a central role in the discussions that took place at the Political Ecology Workshop held at Michigan State University in 1994. The arguments about the place of ecology in political ecology ranged from Vandermeer's assertion in Integrating Political Economy into Ecology, "that political ecology is largely a problem of the social sciences. The natural sciences have very little to contribute, except in a very narrow...boring way...[E]cology has very little to offer at the theoretical level" (Vandermeer, 1994: 7), to Zimmerer who stated in Integrating New Ecological Theory into Political Ecology that, "scientific ecology can help us further elaborate the dialectic between environment and politics that was intended to be born of political ecology...[T]he ecological systems themselves may acquire an importance via their changing character that is well beyond that solely of a baseline or a benchmark or a background" (Zimmerer, 1994: 5).

Taken at face value, Vandermeer's view that scientific ecology has little if anything to offer to the study of people and the environment appears to run counter to the very openness that makes political ecology a useful tool to facilitate interdisciplinary study. Dismissing the natural sciences out of hand when a clear relationship exists between humans and their environment is tantamount to looking at the complexities of the human dimension and merely advocating birth control to solve the problems

observed. Moreover, this perspective dooms the development of any sort of discourse between conservationists and social scientists and, therefore, any important wildlife study by social scientists. Granted, Gibson presented a political economy study of wildlife that contains no ecology, but, if conservation is the issue, leaving out either half of the equation, ecology or humanity, will insure no complete solution emerges.

Zimmerer's viewpoint, on the other hand, recognizes the importance of ecology in the human/environment dynamic and opens the door to the kind of interdisciplinary approach advocated by many conservationists and social scientists alike. The task of creating a discourse will not be simple, however. As Campbell writes in *Towards an Analytical Framework for Land-use Change*, creating such a discourse requires bridging the differences in epistemologies between the positivist tradition of biophysical scientists and the dialectic approach employed by many social scientists. It requires recognizing the importance of both quantitative and qualitative analysis in understanding the human/environment dynamic and understanding that neither alone can provide a complete picture. In this work, Campbell discusses how landscape ecology and political ecology can benefit from a broader understanding of the other's fields (Campbell, 1998: 281-298), but conservation biology could easily be substituted for landscape ecology. The same relationship applies.

The problem is that where as biological scientists tend to view culture as a static, which was demonstrated in the previous section, social scientists tend to take a similar view of the environment. Arguably the most important understanding that conservation biology brings to the study of the human/environment dynamic is the concept of the evolutionary nature of natural environments. Zimmerer that political ecology tends to

employ an outdated view of ecology in which nature is assumed to be static and environmental equilibrium is emphasized. In order to understand the human/environment dynamic, he argues, the dynamic view of the natural world presented by the "new ecology" needs to be integrated into political ecology (Zimmerer, 1994: 2-5).

Zimmerer returns to this theme of dynamic ecology in *Natures Geography: New* Lessons for Conservation in Developing Countries (1998), which he edited with Young. In this volume the value of incorporating aspects of geography and ecology in addressing conservation issues is stressed. In a series of case studies from developing nations worldwide, the importance of understanding the non-equilibrium dynamics of natural environments to an overall understanding of the human/environment dynamic is developed. The paradigm of non-equilibrium dynamics, which is the essence of the new ecology, was developed in opposition to the idea of the balance of nature. It recognizes the natural processes at work in an ecosystem are constantly in a state of flux and are rarely if ever in a state of equilibrium. Zimmerer and Young discuss taking nonequilibrium dynamics one step further and apply it to human altered environments, such as range and agricultural land, where social scientists and land managers alike have maintained a static ecological view. The evidence shows that natural processes continue. albeit in an altered and subdued form, on even highly impacted landscapes (Zimmerer and Young, 1998: 7-26).

Combining biogeography and cultural ecology, Zimmerer and Young define a biogeographical landscape as a "spatially distinctive system of interacting biological processes and physical features in the environment...impacted upon by human activities" (Zimmerer and Young, 1998: 3-11). The twin themes running through this volume are

processes of natural and anthropogenic disturbances, differentiating the latter by the frequency, magnitude, and scale of the disturbance through a study of patch dynamics. Employing the concepts of landscape, defined by heterogeneity and interacting ecosystems, and region, defined as a series of interrelated landscapes including both protected and non-protected areas, ecological units are identified at a spatial scale thought to be essential to sustainable development planning. The book is divided into three parts presenting the conservation challenges facing the different types of landscapes: forest conservation (deforestation and fragmentation), conservation in high mountain areas, and conservation in settled areas (Zimmerer and Young, 1998: 1-26).

The case studies in this volume, including one from the Tana River in Kenya (Medley, 1998: 39-56), emphasize the dynamic nature of both human society and the natural environment. The other unifying concepts running through the case studies include: the ubiquity of past and present human impacts on the landscapes of developing countries, the need for enhanced cultural understanding among ecologists, the importance of non-equilibrium conditions and patch dynamics operating at various scales, and the relevence of evaluating the uncertainty arising from these factors when developing conservation plans. The complexity of dynamic biogeographic landscapes underlines the need to rethink conservation strategies. In particular, Zimmerer and Young cite no longer using destocking programs as the primary means of range management, no longer dismissing agrodiversity out of hand, or prohibiting human use as a necessary step to conservation (Young and Zimmerer, 1998: 327-340).

Along with the role of scientific ecology in political ecology, the epistemological problem was also addressed during the Political Ecology Workshop. In *Epistemological*

Issues in Political Ecology (1994), Whitesell notes that the literature is inconsistent as to the theoretical direction of political ecology, whether it will remain contextualized or move toward generalizations (Whitesell, 1994: 1-2). Both Campbell and Zimmerer and Young offer similar ways to insure scientific rigor.

In Towards an Analytical Framework for Land-use Change, Campbell points out that the use of case studies, common among both ecologists and social scientists, offers a promising avenue for navigating the myriad of factors involved in the human/environment dynamic. The case study method can facilitate the discourse between landscape ecologists and social scientists and lead to the development of useful theory. Additionally, the development of heuristic models can provide a framework for interdisciplinary study of society-environment issues. However, he is quick to point out, these models need to incorporate the issue of uncertainty, prevalent throughout science but especially when dealing with human societies, and not be simply a joining of social and physical models. Instead, new, interdisciplinary models of society and the environmental need to be developed to provide the basis for a more comprehensive study of global change issues including environmental degradation, biodiversity, and sustainable development (Campbell, 1998: 292-296). As before, conservation biology can be substituted for landscape ecology in the above discussion.

Zimmerer and Young also address this issue of scientific rigor in *Nature's Geography*. They argue that the general themes of their book must necessarily be advanced through the use of case studies because of the unique aspects of each study area. They also warn against unwarranted extrapolation toward global conservation prescriptions. On the other hand, the analysis of case studies with shared themes, they

argue, can provide useful intermediate level generalizations (Zimmerer and Young, 1998: 22-23). Thus, through the comparison of general themes running through specific case studies with similar variables, especially when incorporating scientific ecology, interdisciplinary models and broader statements about the human/environment dynamic can be made with acceptable scientific rigor.

One final contribution to the sociocultural literature from the development arena that illustrates the value of political ecology for understanding the human/environment dynamic needs to be presented. In *Popular Development: Rethinking the Theory and Practice of Development* (1996), Brohman looks at the relationship between environment and sustainability. He, like Western in the previous section, feels that the two are inextricably related. Arguments are presented from the perspective of political ecology that critique the idea of applying exclusively technological solutions to environmental problems while ignoring the socioeconomic, political, and ethical aspects of sustainability. Achieving sustainability, he states, is more than simply achieving ecological and agricultural sustainability.

This statement applies to polarized Third World countries in particular. Unless you meet the basic needs of the populace, conservation, especially long-term conservation could be elusive. Using the framework of political ecology, the political and redistributive nature of most environmental issues can be examined in context. While other approaches do not account for the role of the global political economy in the environmental problems of such countries, political ecology, through its study of the structural roots of these problems, has a strong global aspect. Environmental problems in Third World countries, it is argued, must be examined in a North/South context that

shows the structural inequities of global capitalism. At the same time, these studies need to address the sociocultural variations occurring at the local level that make each case unique (Brohman, 1996: 307-317). Here again the sensitivity to scale in political ecology is demonstrated. Without such sensitivity the understanding of historical circumstances and social driving forces and, therefore, the breath of the social dimension will remain intangible.

The sociocultural literature review offered here demonstrates the usefulness of political ecology in understanding the human dimension. Clearly, its multi-scalar, multi-temporal approach offers a practical framework for studying the complexities of social driving forces. The review also shows where political ecology is lacking in ecological understanding, viewing the environment in static terms much the same way biological scientists view culture. While some social scientists recognize this shortcoming, the literature review indicates an approach that recognizes and treats both societies and the environment as dynamic is rare (see chapter 4). Such an approach, using the case study method and the comparison of case studies to identify general themes and create heuristic social/environmental models, can contribute immensely to conservation efforts and help refine the discourse between the social and biological sciences.

Two of the obstacles to furthering this interdisciplinary discourse between the social and biological sciences are, (1) the static view of society held by biological scientists and (2) the static view of the environment held by social scientists. These obstacles have been identified and addressed in this section and the previous. A third related obstacle remains to be discussed, however. In the next section, I address this

third, and arguably, greatest obstacle—the tendency of biological scientists to view the human dimension through a neo-Malthusian lens.

Missed Connections: Applying Mono-Causal Explanations to Multifaceted Issues, The Neo-Malthusian Perspective in the Literature

Whenever a theory of overpopulation seizes hold in a society ruled by a dominate class, then the subservient classes invariably experience some form of material, political, economic, and social repression. —David Harvey

Demographer Ralph Tomlinson wrote that "the history of population theory can be summarized in three words: pre-Malthusian, Malthusian, and post-Malthusian." He also credits Malthus with the being the first to consolidate the ideas of population prevalent at the time into a coherent theoretical system (Neurath, 1994: 11). The Reverend Thomas Malthus, an Anglican vicar as well as a classical economist, published the first of his essays on population in 1798 and continued to develop the ideas presented in it in succeeding editions. Essentially, Malthus worked from the premise that there are limits to growth where human populations are concerned. He argued that while food production grows at an arithmetic rate, population grows geometrically. This "natural law" of populations, he argued, is enforced through positive and negative checks. An example of a positive check is abstinence, while famine is an example of a negative check (Glass, 1953: 1-25; Himmelfarb, 1984: 100-132; Engman, 1991: 11-16).

Malthus' essays have been both controversial and influential throughout the last two centuries. Not only did he set the tone for the population debate, he also defined poverty for the next half century. It helped that his ideas were acceptable and even useful

to early capitalism, as they could be used to justify the exploitation of the poor by the rich. His writings also greatly influenced the ideas of Charles Darwin in developing the theory of evolution, which has become the cornerstone of modern ecological thought. Darwin maintained that Malthus' writings gave him an insight into the competition among members of a population that selected for those with greater fitness. Malthus' influence in this case is ironic considering that he developed his ideas within a strictly Christian framework, thought they applied only to human populations, and denied evolution. Nevertheless, it is the wedding of Malthus' and Darwin's ideas that developed into Social Darwinism and neo-Malthusianism, the latter of which continues to influence ecologists and wildlife managers today, as was pointed out continuously throughout the ecological literature review (Himmelfarb, 1984: 126-129; Price, 1998: 209-211).

Although popular with evolutionary scientists and capitalists, Malthus has not been without his detractors. One of these detractors, who is at least as controversial and has had a profound impact on the social sciences, including the development of regional political ecology, is the classical economist Karl Marx. While not denying the possibility of a Malthusian scenario in a human population, Marx argued that the question of natural limits (which for the purpose at hand is synonymous with the terms ecoscarcity and carrying capacity) is irrelevant. He attacked the way Malthus defined poverty as being the result of limited room at the table of life. To Marx, it was unemployment, not fertility, that was the dominant cause of poverty and was, moreover, responsible for high birthrates (Himmelfarb, 1984: 126-129; Crook, 1996: 174). The host of human misery, according to Marx, could be traced to the inequities of the capitalist system and the

control of the means of production. So the problem to Marx was not one of scarcity, as Malthus argued, but one of equity of distribution (Harvey, 1996: 145).

In Population and Poverty in Classical Theory: Testing a Structural Model For India, Nigel Crook presents the results of the comparison of both Marx's and Malthus' hypothesis about population growth and poverty. Broad empirical economic and demographic indices from India were used to create a model to test the hypothesises. The results of the study clearly showed no significant relationship in India between population growth and poverty and tended to support a Marxist view (Crook, 1996: 173-185).

Another influential critic of Malthus is Ester Boserup. In Conditions of Agricultural Growth: The Economics of Agrarian Change Under Population Pressure (1965), she criticizes Malthus for not taking into account the role of technological development, and the role of population increase in that development, when considering limits to growth. While the neo-Malthusians corrected this oversight, they focus on the negative aspects of technological advancement and assume it can never be sustainable. In *Development Theory: An Analytical Framework and Selected Applications* (1996), she presents six models of cultural development that address these issues. The models are based on the stages of development experienced by the postindustrial nations (Boserup, 1996: 508-512).

In these models, she focuses on long-term population change, which in each case is accompanied by technological developments that enabled the transition to the next developmental stage. At every step, growth in population or more specifically increased population density is required, especially in the industrializing stage, where large numbers of people for labor are essential. The process of development is a dynamic one,

and population is the driving force in all but the sixth model, where the occupational structure replaces population as the driving force in an electronic society. This last model describes post-industrial societies where population growth levels off or even declines due to cultural changes. Though the models are based on the historical stages of development experienced by the postindustrial societies of today, Boserup maintains that the models can still be applied to societies that are at either preindustrial levels or in the process of industrializing (Boserup, 1996: 510-514).

Indeed, Tiffen and Mortimore's longitudinal case study in Machakos, Kenya (1930 to 1993) entitled, *Malthus Controverted: The Role of Capital and Technology in Growth and Environment Recovery in Kenya* (1994), examines the idea that sustainability is impossible in an area experiencing population growth. Their findings show that capital investment, appropriate technological change, combined with increased population density results in both a higher standard of living and environmental conservation, supporting Boserup's ideas. Moreover, the situation in Machakos is not unique. Case studies from Nigeria, Indonesia, and throughout the rest of Kenya reflect similar findings (Tiffen and Mortimore, 1994: 999-1010).

These criticisms in the social sciences not withstanding, it is not hard to understand the reason for the influence of Malthus and neo-Malthusian thought in the biological sciences. As noted above, Malthus' ideas of limits to growth greatly influenced Darwin, whose ideas are the foundation of modern ecological thought. The concept of carrying capacity born of this union has been useful in understanding the population dynamics of non-human species. Thus, it has become deeply ingrained in the biological sciences, which, once again, was demonstrated in the ecological literature

review, and the tendency is for ecologists to apply this useful tool for wildlife management to the human dimension. This application does seem a logical step, especially if one accepts humans as a part of rather than separate from their environment. The problem, however, is that simplistic ecoscarcity models that work well with nonhuman animals are not applicable to complex human societies. Human populations are quite different from other animal populations. One herd of buffalo or pride of lions will behave pretty much the same as another herd or pride, but human populations differ greatly in their behavior patterns even within the same environment. Along with a vastly more complex social and political structure, humans also have an immense material culture that enables us to alter our environment in ways non-human animals cannot. Additionally, wildlife exists in an essentially closed system, while the human system is open. That is, wildlife is limited in its options during times of stress. It can migrate, but it cannot expect aid from other members of its species as humans do especially in the present global system, which was essentially Marx's point.

To clearly illustrate the problems with the wholesale application of carrying capacity to the human dimension, I will turn to two of the leading standard bearers of neo-Malthusian thought, Paul Ehrlich, who wrote the *Population Bomb* (1968), and Garrett Hardin, who wrote *Tragedy of the Commons* (1968). These two works have been referred to at the "Bible and epistle" for all those who see population growth as the root of all evil (Ellis, 1996: 158). Both of these researchers share Malthus' concern for population numbers and carrying capacity, which they seem to feel are naturally and inextricably linked together. They are often cited in the ecological literature when the discussion turns to carrying capacity. In the review above alone, one or the other is

discussed by several authors including Terborgh in Requiem for Nature, Salafsky in Natural Connections, and Olembo in Conservation for the Twenty-first Century.

In *The Population Explosion*, Ehrlich defines overpopulation as the condition in which a population cannot support itself without degrading and depleting the resources of the environment on which it relies. Carrying capacity, then, is defined as the population in an area relative to the resources and the environment's capacity to sustain human activity. He says, "In short, if the long-term carrying capacity of an area is clearly being degraded by its current human occupants, that area is over populated" (Ehrlich, 1990: 38-39). What he fails to take into account is that humans have the unique ability to increase the carrying capacity of the land through technological development. In such a case, by Ehrlich's own definition, though the population numbers have not changed, the land is no longer overpopulated. The introduction of one additional variable, technology, renders the role of population numbers less significant. The introduction of a myriad of factors, such as poverty, social inequity, and lack of opportunity makes it even less so. Additionally, under some circumstances, such as irrigated farming, a drop in population levels can actually exacerbate environmental degradation (United Nations Conference on Desertification, 1977). When viewed in this light, the idea of carrying capacity, seems to have little relevance to human societies.

Ehrlich himself seems to recognize this problem, if not its implications. He argues that, despite his own definition, the only way an area can be deemed to be no longer overpopulated is for population growth to end, which is not only a tautology but misses the point entirely. It is hard to see how a problem such as wildlife diversity loss could be blamed on anything but population pressure from the neo-Malthusian

perspective. Ehrlich does admit that aid to peasant farmers and institutional reforms may also help, but only after ending population growth. What Ehrlich fails to see is that if you can change the carrying capacity of the land without changing the number of people or if a population drop results in increased environmental degradation, then too many people was not the problem in the first place or at least not the only problem.

When faced with this dilemma, Ehrlich backtracks and redefines his definition of carrying capacity somewhat by saying, "... overpopulation is defined by the animals that occupy the turf, behaving as they naturally behave, *not by a hypothetical group that might be substituted for them*" (Ehrlich, 1990: 40). His use of the word "animals" is curious. Culture is one of the few things that clearly differentiates humans from other animals. Its use in this new definition implies that culture is irrelevant where carrying capacity is concerned. However, Boserup's models discussed above show that culture can and historically has changed carrying capacity through innovation. Tiffen and Mortimore's findings also support the importance of culture.

Part of the problem with applying carrying capacity to human populations lies in the way it is calculated. For example, Ehrlich calls his formula for calculating environmental impact "the key to understanding the role of population growth in the environmental crisis" (Ehrlich, 1990: 58). The equation I=PAT uses Population (P), which is the population of a given area, multiplied by Affluence (A), which is some measure of individual consumption, multiplied by Technology (T), which is the environmental disruption by technology to obtain the needed consumer goods, to calculate environmental impact (I) (Ehrlich, 1990: 58-59, 214-215). While on the surface this formula seems sound, in reality it depends on three highly subjective variables.

These variables are: (1) the land to be included (i.e. the land under cultivation now versus all possible land that could be cultivated), (2) the yield expected from that land (i.e. rain fed agriculture versus irrigation and fertilization), and (3) the standard of living assumed (i.e. subsistence level versus the American standard of living). The assumptions made when defining these variables can alter the calculated result so greatly as to make it meaningless. Depending on how these variables are weighted or altered, carrying capacity estimates can range from 3.6 billon to over 100 billion people for the entire earth (Neurath, 1994: 41-52). Crook illustrates the absurdity of such calculations when he says:

The modern neo-Malthusian who regards space rather than food as the limiting factor can indulge in a reductio ad absurdum and calculate the time needed to reach a situation when there is 'standing room only', not to mention two or three tiers of demographic stacking. Other scientists have calculated the requirements for water in various versions of the 'carrying capacity' concept. In the very long run we are all Malthusians, and it would be absurd to pretend otherwise. But equally, the point is trivial, as are most extrapolation ad infinitum. One might as well argue that the tendency of the savings rate to rise with income portends disaster, since by the time that it has reached 100 percent, consumption will be zero and everyone will starve. (Crook, 1996: 175)

The fluid nature of natural limits or carrying capacity in human populations, whether you are looking at global or local populations, is due to our ability to manipulate our environment and the fact that human societies are not closed systems.

In addition to being the co-bearer of the carrying capacity standard, Hardin also championed the idea that common ownership of land is universally detrimental to the environment when populations grow in *Tragedy of the Commons* (1968). He based his arguments on the history of the commons in England. His concept of communal ownership of land as a purveyor of social ills when combined with population growth is prevalent in the ecological literature (Ciriacy-Wintrup and Bishop: 713-727). There are two main problems with Hardin's arguments about communal ownership, however. The first is that he fails to differentiate between commonly owned lands and open access lands and seems to use the two concepts interchangeably. In reality the two are very different. Communal ownership implies structured access to lands based on agreed upon rules of use.

Open access lands, on the other hand, do not share the same protection as commonly owned lands and their value is often discounted and resources overexploited. The second problem is that basing his arguments on European failures, he misses the examples of successful communal ownership from around the world. The reason for this oversight, aside from its obvious Western bias, is that Harden fails to recognize the role of mutual cooperation in society and concentrates on competition between individuals (Berkes, 1989: 70-88; Gibbs et. al., 1989: 22-32). It should be noted here that the role of mutualisms between organisms as well as competition is recognized as exceedingly important to the health of ecosystems by many ecologists, particularly in the field of Conservation Biology (Campa, 1999: personal communication). Hardin's lack of historical perspective in *Tragedy of the Commons* is also disturbing.

Barry Commoner vehemently attacked Hardin and Ehrlich at the 1970 meeting of the American Association for the Advancement of Science. At this meeting he said, "Saying that none of our pollution problems can be solved without getting at population first is a copout of the worst kind" (Ellis, 1996: 258-259). Commoner argued that the focus on one single cause and cure for a multifaceted problem was questionable at best and of little use in understanding the problem. He felt, "They [the neo-Malthusians]...

'read into' the environmental crisis 'whatever conclusions their own beliefs ... suggest'" (Ellis, 1996: 259-260). Even more disturbing to Commoner than Ehrlich and Hardin's mere insistence that population numbers are all important, were the social and political implications of their ideas, particularly those of Harden, which condemn most of the world to live at "the material level of barbarism" while the "fortunate minorities live at the moral level of barbarians." Likewise, he condemned Ehrlich's suggestion that population should be controlled "by compulsion if voluntary methods fail" to be nothing less than "a program for political oppression" (Ellis, 1996: 260).

Throughout the debate Hardin remained basically silent, but Ehrlich fought Commoner vehemently. Where as the neo-Malthusians felt population growth was the great evil, Commoner saw the unrestrained development and misuse of technology, without proper regard for its environmental impact, as the main problem. Though both claimed to recognize that they were dealing with a multidimensional situation, each accused the other of having too narrow a focus. Ironically, they were both correct in this criticism (Ellis, 1996: 260-262).

Probably due to these attacks on the idea of carrying capacity and the realization, at least nominally, that culture plays a role in the human dimension, Hardin introduced the concept of cultural carrying capacity in *Cultural Carrying Capacity: A Biological Approach to Human Problems* (1992). In the article he states:

...I propose that we abandon the term carrying capacity in favor of cultural carrying capacity. As defined, the cultural capacity of a territory will always be less than its carrying capacity (in the simple animal sense). Cultural capacity is inversely related to the (material) quality of life presumed (Hardin, 1992: 20).
Although cultural carrying capacity appears to incorporate the idea that culture does have an effect on carrying capacity, the main thrust of the new concept is still that overpopulation is the cause of poverty, strife, and environmental degradation. Indeed, Hardin says so himself when he states that "... the [cultural] carrying capacity approach results in replacing the concept of a 'have not' nation with that of an 'overpopulation' nation" (Hardin, 1992: 23). In essence, the terms have changed but the focus remains the same. Moreover, the definition of cultural capacity implies a justification for conspicuous consumption by rich nations without directly coming out and saying so. In fact, it implies that if a population is living within its cultural capacity, there is no problem with consumption, with which other neo-Malthusians, such as Salafsky (1994) and Terborgh (1999), clearly disagree.

Those who question the concept of cultural carrying capacity, Hardin claims, are failing to look at the long run. For example, he attacks the idea that innovation occurs where the need is greatest by pointing to countries like Ethiopia and saying, "... is inventiveness at its maximum in such poor countries? Certainly not," (Hardin, 1992: 21). Of course, he fails to take an historical perspective, a common neo-Malthusian failing, and take into account the mitigating factors involved throughout Africa, like colonialism and its aftermath. Instead, he, like Malthus and Ehrlich, end up blaming the poor for being poor.

In both *Tragedy of the Commons* and *Cultural Carrying Capacity*, Hardin takes exception to Marx's idea of "From each according to his ability, to each according to his needs" (Hardin, 1992: 22). In his view, too much sharing of wealth, whether it be material wealth or information, is detrimental to a people's competitive position.

According to Hardin, "parochial distribution of resources should be matched by parochial consumption," which means that countries do not suffer shortages in supply but rather "longages in demand." His answer to ecoscarcity is drastic reduction in population numbers to the point where mortality is higher than fertility and the modification of our views on inalienable human rights where such drastic reductions are concerned (Hardin, 1992: 10). He seems to have taken Malthus' parable of the banquet of life very much to heart where poor nations are concerned, while encouraging wealthy nations to satisfy all hungers.

Hardin's idea of cultural capacity is quite similar to the idea of effective demand, as described by David Harvey in *Justice, Nature and the Geography of Difference* (1996). With effective demand, the power to consume is withheld from the poorest classes under the auspices of controlling population pressure on the environment, while at the same time arguing that the wealthier classes should consume as much as possible. Harvey calls this idea "illogical" and "obscene" in that it seems wholly inconsistent with population theory (Harvey, 1996: 141-142). To illustrate the folly of this theory, he states:

... capitalist countries preach to the rest of the world about how the latter's population growth is putting pressure on the resources while urging their own upper classes on to an orgy of conspicuous consumption as a necessary contribution to sustainable growth (Harvey, 1996: 144).

In essence then, Harvey points out, there ends up being one law for the rich and one for the poor, and the rich do the poor a favor by creating artificial scarcity before natural scarcity can get them (Harvey, 1996: 144).

While consumption is recognized as a contributing factor to environmental degradation and wildlife extinctions by ecologists like Terborgh and Salafsky, its role is down played in favor of the neo-Malthusian population factor. Just to put the issue in perspective, and show how easy it would be to make a mono-causal argument using consumption in the industrialized world, let us examine the idea of conspicuous consumption for a moment. As far back as the 1950s the United States, with only sixpercent of the total world population, consumed 30 to 50 percent of the world's resources (Ellis, 1996: 259). This incredible consumption rate has not reduced. On the contrary, it has increased.

Today the United States and Canada combined consume 20 times more energy than Africa and twice that of Europe (National Geographic Society, Population and Resources Map, Oct. 1998). Roughly what this means is that, using Africa as a reference point, an American baby consumes 75 times more resources than an African baby. In other words, 16.5 billion Africans (over twice the present world population) living at the level they are now would be required to exert as much pressure on the environment as 220 million Americans. Similarly, the industrialized nations, with only 15 percent of the population, produce approximately 98 percent of the world's pollution. The United States alone produces 45 percent of the total carbon dioxide in the atmosphere. Given these figures, it is hard to argue with Engman when he says, "The unsavory crux of the matter is that some people stress and strain the ecosystem out of all proportion to their limited numbers" (Engman, 1991: 21-22). Even if one were to argue with the exact figures presented, changing a percentage point here and there, one would be hard pressed to justify such enormous consumption, let alone argue that overpopulation in the Third

World is single-handedly responsible for environmental degradation, extinction, and the global depletion of non-renewable resources.

Another problem with the neo-Malthusian perspective was presented in chapter 1. In that chapter, I stated that although population growth is not the only factor that could be considered as either a social driving force or a proximate cause, population holds a unique position among causes. This uniqueness should be clear from the preceding discussion of the neo-Malthusian perspective, which treats population as virtually the only factor involved in environmental degradation. Although ecologists with a strong neo-Malthusian bent like Brown warn against assuming a cause and effect relationship between population growth and environmental degradation (Brown, 1987: 20-37), it has often been assumed so in practice. In such cases, the result is an ecofallacy where macrolevel observations were used to make micro-level assumptions, as occurred in Rwanda and elsewhere (Campbell, 1996: 4-5). In such cases, social driving forces and historical circumstances have been ignored. Essentially, there is no room for either within the neo-Malthusian perspective.

There are many political and economic reasons that one might adopt a Malthusian view of the world. From its very inception, Malthus' ideas found a home among rich conservatives and the early capitalist economy. It fit in well with and supported the idea of survival of the fittest and essentially unburdened the rich of any responsibility to the poor. Today, it can be used for very much the same purposes, to legitimize the status quo, as demonstrated by Hardin's concept of cultural carrying capacity. In essence, the neo-Malthusian perspective when applied to human populations is far more political and economic than scientific. In fact, given the definitional problems with carrying capacity,

the fact society can alter it in a heartbeat, and the extreme subjectivity of calculating it in the first place, carrying capacity is not scientifically applicable or useful at all when studying human societies.

The question becomes then, if this concept is so useless in understanding the human dimension, why would ecologists like Brown, Salafsky, and Terborgh cling to it so doggedly when some like Western seem to be able to move beyond it? The obvious answer is a lack of social understanding and the dynamic nature of culture, but the entire answer goes beyond the obvious. A large part of the appeal of the neo-Malthusian view is that it fits so well with the scientific method. It has measures that appeal to a positivist outlook, points to a cause in a reductionist manner, and is tried and proven in studying wildlife populations. With this perspective, there is no reason to examine any time but the present or any cause but the proximate cause, thus the focus of NGOs like WWF and NC. The problem is that, as I pointed out above, human societies, particularly where material culture is concerned, differ from anything found among other species and are constantly changing, making factors like historical circumstances and social driving forces all-important.

I argue that the main reason many ecologists, such as those listed above, examine multi-faceted problems with what in essence becomes a single factor approach is that their neo-Malthusian grounding limits their understanding of human societies. This limitation hinders the further development of the interdisciplinary cooperation called for by Western in the ecological literature review and Zimmerer and Campbell in the sociocultural review to address conservation problems. As previously established, such an approach needs to recognize the value of both quantitative and qualitative data and

allow for multiple causes and explanations for multifaceted problems. Recognition of these elements is essential to understanding the human dimension and, therefore, the human/environment dynamic. The reluctance to embrace such an approach results in the kinds of problems discussed with Brown and Terborgh and Salafsky's schizophrenia. However, if the human dimension is as important to the future of wildlife as this literature review demonstrates that it is and the issues involved in conservation are truly multifaceted, then any approach to conservation that does not move beyond the Malthusian perspective, seeing both the environment and human society as dynamic, not only recognizing but treating multifaceted issues as multifaceted issues and examining factors such as historical circumstances and social driving forces will be unsuccessful.

Research Question and Objectives

Chapter 1 and preceding sections of the literature review have established that the problems associated with conservation are multifaceted and require an interdisciplinary approach to solve. The need to further the discourse between the biological and social sciences to address those problems is demonstrated in the literature of both groups. Also clear from the literature are the obstacles to be overcome in order to refine interdisciplinary cooperation. First, there is the need for greater social understanding among ecologists and the need to move beyond Malthus when looking at human populations. Second, there is the need for improved understanding of the scientific ecology in the social sciences. The literature review demonstrated that both human cultures and the environment are dynamic. And finally, it established the need to

examine the historical circumstances and social driving forces at work in a study area and to look to the future for contextual understanding.

To address the issues presented in the literature review, I used an approach that emphasized context through background information gathering in a study area. The specific research question I addressed was: what information is required for improved integrated conservation that incorporates historical circumstances, social driving forces, a dynamic view of ecosystems, and looks beyond the contemporary? My objective was to design a framework for understanding the specific circumstances of a conservation to answer my question. The result was the Contextual Framework for Wildlife Conservation, which is presented in chapter 4 with a case study from Kajaido District, Kenya for illustration.

Chapter 3

METHODOLOGY

It is from the earth that we must find our sustenance; it is on the earth that we must find solutions to the problems that promise to destroy all life here.

—Justice William O. Douglas

Origins of the Conceptual Framework for Wildlife Conservation

When I began my course of study, I knew only that I had a strong interest in wildlife and felt that Geography had much to offer to its conservation. I began my research by looking at the CBC literature and soon began thinking in terms of designing an integrated conservation plan for Kajiado District, Kenya. I choose Kajiado (figure 2) as my study area for three main reasons. The first is its location. Kajiado is adjacent to Tsavo West National Park and encompasses Amboseli National Park (figure 3), two of the most important parks in terms of revenues and wildlife diversity in Kenya (Western, 1994: 15-20; Campbell et. al., 1999: 5-7; Campbell et. al., 2000: 7). Additionally, Amboseli was an important test case in CBC, which was discussed in the literature review. Second, East Africa in general is home to a wealth of wildlife diversity on a global scale (Western, 1994a: 15-19; Campbell et. al., 1999: 6). Third, there is the district's history of sweeping socioeconomic change, demographic turmoil, and human/wildlife conflict (Western, 1994a: 15-50; Campbell, 1993: 258-271; Campbell et. al., 2000: 3-11). All of these factors will be examined further in the discussion chapter.



Figure 2 - Map of the Study Area: Kajiado District, Kenya (OCHA ReliefWeb webpage, 2002).



Figure 3—Eastern Kajiado District showing Amboseli and Tsavo West National Parks (After Campbell, 2000)

As I studied the conservation and development literature to outline an integrated conservation plan for Kajiado, the enormous number of variables (political, economic, social, institutional, and ecological) that would need to be taken into account became overwhelming. Simply knowing I needed to include an historical perspective, social driving forces, and trend analysis for planning into the future did not tell me how to determine the hierarchy of variables and set boundaries for the construction of the conservation plan. Without such a guideline, I knew my plan would run into the same sorts of problems as previous and present plans (see chapter 4).

Although taking into account the background of a conservation area is a major component of ecosystem management (Meffe and Carroll, 1997: 347-382), just how broad temporally and spatially and in terms of subject matter should that background research be? It seemed that resource management decisions were often made ad hoc in response to specific crises. Moreover, decision-makers have to take into account numerous interests and commonly have limited data (Meffe and Carroll, 1997: 385-415). However, if a framework existed for determining the relevant background research necessary to provide the pertinent data and identify where further research is required, conservation decisions could more easily be made.

From this realization came my research question: what information is required for improved integrated conservation that incorporates historical circumstances, social driving forces, a dynamic view of ecosystems, and looks beyond the contemporary? My objective to design a framework for understanding the specific circumstances of a conservation area soon followed. To meet my objective I used the interdisciplinary tools offered by Geography and Conservation Biology, from which came my theoretical framework employing political ecology and scientific ecology, to develop my Contextual Framework for Wildlife Conservation. The Framework consists of three main points: the Historical Perspective (Point A), the Contemporary Social Driving Forces (Point B), and the Future Trends (Point C). Under each of these major points are various subpoints, ten in all, with associated questions to help guide research.

The Framework is designed to help meet the need for contextual planning by providing an outline for background information gathering. The three major divisions (Points A, B, and C) are designed to complement each other. The information gathered in studying the historical circumstances (Point A) is designed to aid in understanding the contemporary situation (Point B). Likewise, the information gathered from the first two points is designed to identify trends that can facilitate decision making and help with the allocation of resources into the future (Point C). The questions and sub-points are designed to be broad enough to apply to conservation areas in general. Because of this generality, some questions and sub-points will have more relevance to a particular area than others, as the example from Kajiado in the discussion chapter will show.

Data Collection: Library Research, Personal Communications, and Survey Data

The majority of the data I used to develop the Framework came from my review of the ecological and sociocultural literature, which was outlined in the previous chapter. Within the ecological literature, I concentrated on the literature coming out of Conservation Biology. Likewise, I concentrated on the literature coming out of Geography and, to some degree, Anthropology and Sociology for the social perspective. The reason for concentrating on these sources is their openness to interdisciplinary cooperation. I also consulted publications from conservation related NGOs, such as WWF, NC, and the Biodiversity Support program as well as information available on the internet and in written form from international bodies, including UNEP (United Nation Environment Programme) and UNESCO (United Nations Educational, Scientific, and Cultural Organization).

To supplement my library research, I visited Kenya during May and early June 2000 to put the literature I have been reading into perspective and to discuss conservation related issues with Kenyan conservationists who had field level experience with the issues involved. Those I spoke with included Dr. Perez Olindo (Former Director of the Wildlife Department), Dr. Helen Gichohi (Director of the African Conservation Centre— ACC), and various employees of the KWS. I also discussed conservation issues and the human/environment dynamic with MSU faculty who had familiarity with the study area and/or expertise in conservation.

I further augmented the library and personal communication data I collected with data from two household surveys conducted in Kajiado. The first study in 1977 conducted by the Institute for Development Studies at the University of Nairobi was comprised of 225 farmers and 167 herders for a total of 392 respondents. The second study took place in 1996 (funded by the Ford Foundation) was somewhat larger with 559 respondents comprised of 227 herders and 332 farmers. The data from both surveys was used by permission of the African Conservation Centre (ACC). The papers *Interactions Between People and Wildlife in SE Kajiado District, Kenya* (Campbell et. al., 1999) and *Land Use Conflict in Kajiado District, Kenya* (Campbell et. al., 2000), based on analysis of the data from these surveys, were invaluable to the understanding of the data and played a major role in my analysis.

The sampling method used in both cases closely approximates a stratified random sampling technique and the study area was broken up into strata ecological gradients and major land use type. After both the 1977 and 1996 surveys were analyzed, community workshops were held by the researchers to discuss the survey results with key informants.

The purpose of these workshops was to include local people in the research process and to gain valuable insights into the interpretation of the survey results and to clarify issues that were indistinct, underestimated, or overestimated (Campbell et. al., 1999; Campbell et. al., 2000).

Along with socioeconomic and demographic questions, these surveys also included human/wildlife conflict questions as well, providing the sort of crossdisciplinary information I needed. Furthermore, since the two surveys were conducted in the same study area, employing the same methodology, and had similar numbers of respondents, they added a longitudinal aspect to my analysis of the conservation area.

Analytical Procedure

Scale, both temporal and spatial, and the adequate representation of stakeholders were key components in designing the Framework. The library and Internet research provided global, national, and, to some degree, local level information. The discussions I had with Kenyan ecologists provided a more personal national level perspective and, once again to some degree, a local level understanding that was missing from the library research. Without having visited my study area, my research and analysis would likely be similar to that of the "arm-chair" anthropologists of the 19th century. Granted my time in Kenya was brief and my discussions, therefore, not as extended as I would have liked. Nevertheless, I gained a perspective I would not have otherwise.

The 1977 and 1996 survey data provided both a longitudinal perspective and a more in-depth view of the local level (a perspective easily discounted or overlooked) than any of the other sources of data I consulted. I must emphasize that I relied heavily on the

papers discussed in the previous section (Campbell et. al., 1999; Campbell et. al., 2000) for my interpretation of the survey data. Although I preformed some analysis (multiple regression, factor analysis, principal components analysis) on the human/wildlife conflict data, the results were questionable and not applicable to designing the Framework. Being familiar with both the data and the papers, I could see no value in recreating previously compiled, reliable data analysis.

The data collected for each of these levels, international, national, and local, were then broken down into the three points of the Conceptual Framework: The Historical Perspective (Point A), Contemporary Social Driving Forces (Point B), and Future Trends (Point C). During the analysis and the development of the sub-points and questions under each major point, numerous instances of overlap between points were noted and expected, as one point is designed to flow into the next. Also, holes in the data for Kajiado, the case study being used to illustrate the Framework, are noted as areas where additional research is necessary. Once again, a complete outline of the Framework follows in chapter 4. The short-comings of the Framework, its contributions to understanding of the human/environment dynamic and the development of the discourse between the biological and social science, and implications for future research will be addressed in chapter 5.

Chapter 4

DISCUSSION: THE CONTEXTUAL FRAMEWORK FOR WILDLIFE CONSERVATION

If we wish to find any lasting solutions to our problems, we must act at the root cause. The only cure for present world problems, including that of the natural environment, is for people to replace ignorance with knowledge, greed with generosity, and lack of respect for life with humanitarian values.

—The Dalai Lama

Introduction to the Contextual Framework

The literature review demonstrated the knowledge that conservation and development are linked has been around for decades and that an interdisciplinary approach is needed to achieve conservation goals. It demonstrated that ecologists are becoming increasingly aware of the importance of the human dimension to conservation strategies and that issues like poverty and social inequity must be addressed to successfully protect wildlife (Western, 1997; Campbell, 1996; Zimmerer and Young, 1998). Likewise, it was also established that social scientists are expanding their research into environmental and wildlife studies to better understand human behavior especially in places like Africa where wildlife plays a prominent role in all levels of society (Campbell et. al., 1999; Gibson, 1999). What is equally clear is that African conservation problems require African solutions, thus the need for local participation (Western, 1997: 43-61), as I suspect is the case everywhere. The experience of Amboseli National Park in Kenya was presented in the literature review as an example of an integrated approach to conservation that relied on CBC (Western, 1994a: 15-52). However, numerous other contemporary and earlier examples of integrated approaches appear throughout the literature including: Lusigi (1978), Pratt and Gwynne (1977), Sandford (1983), Anderson and Grove (1987), Western and Pearl (1989), Western and Wright (1994), Metcalfe (1994), Metcalfe (1997), Uphoff et. al. (1998), Zimmerer and Young (1998), Berger (1993), and Ole Parkipuny and Berger (1993).

Many of these sources were discussed in the literature review and some of the others are referred to in this chapter. As stated, it is not necessary to present each individual case, as Amboseli offers a good overview of the issues one encounters when trying to integrate conservation and development and the progress that has been made toward addressing those issues. Because of its relevance to the Kajiado, Amboseli is further examined in this chapter.

The literature reveals that many of the problems plaguing integrated approaches to conservation and development tend to be reoccurring. These problems include: political instability, lack of economic security, political corruption, institutional weakness, land tenure issues, the failure to see wildlife as a political issue, limited or nominal local participation and benefit, inappropriate development and/or conservation strategies, and the discounting of the environment (Anderson and Grove, 1987: 1-10; Khalikane, 1991: 1-15; Western, 1994a: 44-50; Gibson, 1999: 1-20). However despite the successes thus far achieved, none of the examples I examined has been able to

address all the problems facing conservation today or thoroughly plan for those in the future.

Even the CAMPFIRE program in Zimbabwe, which is considered by many as an on going example of a successful integrated conservation program (Metcalfe, 1994; Metcalfe, 1997), is not without its problems. Some researchers feel that instead of devolving power the Department of National Parks and Wildlife Management has actually extended its control over wildlife and that the reduced levels of poaching may actually be more closely tied to increased law enforcement than an heightened local conservation ethic (Gibson, 1999: 110-116, 145-150).

Given the broad concerns facing conservation, perhaps no approach can fully address them all and foresee every contingency. However, since the issues tend to be dynamic in nature (Zimmerer and Young, 1998), an approach that treats them as such is more likely to be adaptable to the particulars of a given study area. This is the way ecosystem planning views the environment (Meffe and Carrol, 1997: 347-419; Baydack, Campa and Haufler, 1999) and political ecology views human societies (Blaikie and Brookfield, 1987; Campbell and Olson, 1991). An approach that addresses both human and environmental dynamics will require the compilation and analysis of a vast amount of data and building on the interdisciplinary foundation these approaches developed. To build on this foundation, the obstacles that limit interdisciplinary cooperation discussed throughout this thesis need to be overcome. Common ground must be more firmly established between the positivist approach of the ecological sciences and the dialectical approach common in the social sciences and the discourse between the two refined to fully address conservation issues. With the interdisciplinary nature of the issues facing

modern conservation, the importance of furthering this discourse cannot be overestimated (Campbell, 1998: 292-296; Zimmerer and Young, 1998).

Enlightened approaches to either conservation or development have emerged only relatively recently. Recall that the conclusions of the Airlie House Workshop in 1993 were that although local participation is essential to conservation the concept is too new and too many questions remain for simple answers (Western, 1994b: 499-511; Wright, 1994: 524-535). Likewise, Blaikie and Brookfield did not publish their seminal work on regional political ecology until 1987 (see literature review). The positivist perspective of ecologists leads them to seek essentially mono-causal explanations for multifaceted questions. The prime example of this tendency is the importance assigned the human population factor in the literature. This perspective combined with a static view of the human dimension simplifies the human half of the human/environment dynamic, produces conservation designs that are firmly grounded in the here and now, focus exclusively on proximate causes, and are, therefore, static (see the literature review, particularly the missed connections section).

An example of such a static design comes from the NC's site conservation planning approach, which was presented in the literature review (Nature Conservancy, 2000). Likewise, the bioreserve approach of the Man and the Biosphere Program (MAB), which has included Amboseli National Park since 1992, is essentially static. While MAB is progressive and tries to address the human dimension, it is firmly grounded in the here and which limits the flexibility of any plan (Dyer and Holland, 1988: 635-641; UNESCO, 2001). MAB also bases reserves on fixed political boundaries designed to preserve wildlife rather than embrace the broader ecological

processes (Campa, 2002: personal communications). The frustration that can result from oversimplifying the human dimension can lead to regression toward a preservationist position, despite the demonstrated untenable nature of such a position. Some argue this regression has occurred within WWF with its ecoregion approach, which was also discussed in the literature review (Campbell, 1999: personal communications). Exacerbating the problem is that traditionally social scientists offer little direct help to ecologists in understanding the human dimension because few have deemed wildlife an appropriate area of study (Gibson, 1999: 5) and tend to view the environment in static terms (Zimmerer, 1994). These factors underline the reasons for the limited discourse and the lack of progress in integrated planning.

Static conservation approaches cannot address the multiple spatial and temporal scales of the human/environment dynamic. One reason is that the human role in a study area is taken out of context. Societies do not exist in isolation anymore than ecosystems or the conservation needs of any locale. Historical circumstances (human as well as natural) must be taken into account to place the contemporary situation in context and plan for the future. Developing this perspective requires looking beyond the proximate causes of change to the social driving forces propelling that change. Context is the key to this perspective and addressing my research question: what information is required for improved integrated conservation that incorporates historical circumstances, social driving forces, a dynamic view of ecosystems, and looks beyond the contemporary? To address this question I developed the Contextual Framework for Wildlife Conservation (table 1) as an aid to gathering and analyzing the required information.

Table 1 shows the three main points of the Framework: the Historical Perspective

A Contextual Framework for Wildlife Conservation
Point A: The Historical Perspective (Where have we been?)
Sub-Points
1. Identify the relevant historical time frame for studying the conservation area.
• At what point historically do the changes visible today began to occur?
• What informational resources (historical, ethnographic, paleo-environmental, wildlife
monographs, indigenous, etc.) are available to determine the appropriate time period?
2. Examine the environmental setting of the conservation area, identifying not just soil and
vegetation types but the ecological processes at work and how they have changed.
Differentiate between anthropogenic and natural factors when possible. (Do not neglect
Mindigenous knowledge.)
• What scientific and local sources of information are available?
• what do they tell us about now and why the landscape has changed during the historical
Period:
Analyze the harden processes been simplified and in what way:
3. Analyze the human history of the conservation area during the historic period using as
events are occurring and be careful not to underrepresent the indigenous viewpoint
• What materials are available from historians, social scientists, local sources, etc?
• What inatchais are available from historians, social scientists, local sources, etc.
at what scales do they operate?
• Has the mix of cultures changed?
 How have the relations between different groups (tribal ethnic religious) changed? What
are the factors involved and at what scales do they operate?
• What is the development history of the conservation area and who benefited? Who did not
benefit? What can we learn from this?
4. Examine the native wildlife communities in the study area during the historical period.
Determine the composition and distribution wildlife populations and how that has changed.
• Has the composition or movements of wildlife species changed? What factors are
responsible for those changes and at what scales do they operate?
• What information is available from wildlife biologists and managers? Is there information
on habitat types and changes within those types? Is data available on the historical range of
variability of native wildlife species? What information is available from local sources?
• What is the conservation history of the study area and what can we learn from it? What
metrics are available to measure the impact of previous plans?
• Have wildlife interests been included in conservation legislation and policy?
• If wildlife tourism/utilization has been a factor in the conservation area, where do monies
accrue and now has this impacted wildlife?
• Are there protected areas (parks, reserves) within or adjacent to the study area? what molicy coverns them and what is their relationship to non protected areas?
6 Examine the relationship between the human and natural history of the concernation area
5. Examine the relationship between the numan and matural mistory of the conservation area and the trends that emerge. Pay attention to the role scale plays in this analysis
Historically, what were local attitudes toward the natural world and wildlife? Toward
protected areas? How has the natural world in general and wildlife in specific been viewed
historically?
• How have these attitudes effected the relationship between the cultures in the conservation
area with their environment and with wildlife?
• Have those attitudes toward the environment and wildlife changed? What factors are
involved and at what scales do they operate?
• What is the relationship between the conservation and development histories and how has
that impacted local people and wildlife?
• What trends emerge from the analysis?

Table 1— A Contextual Framework for Wildlife Conservation.

Point B: Contemporary Social Driving Forces (Where are we now?)
Sub-Points
1. Building on the data collected in the historical analysis, identify the proximate causes of change at work in the conservation area. Pay attention to the scale at which these causes are operating.
• What metrics are available to measure change? What environmental and human tolerance
thresholds are involved?
• What changes are the result of natural proximate causes (processes)?
• What changes are the result of anthropogenic proximate causes?
• What is the degree of severity of the various anthropogenic factors?
2. With the proximate causes identified, focus on those anthropogenic causes negatively impacting or potentially negatively impacting wildlife. Analyze the economic, political/institutional, sociocultural, and environmental driving forces associated with those
proximate causes at the local, national, and global levels.
• At what scales do the drivers operate?
• How do they relate to one another?
• What metrics are available to measure their impact on the conservation area?
3. Relate the analysis of Sub-Points 1 and 2 to conservation issues, such as wildlife composition and distribution, habitat change and fragmentation, land use changes, and issues of tenure to identify contemporary trends.
 What are the conservation and development policies/philosophies in effect? Are they coherent and coordinated between protected and non-protected areas in terms of planning? What data is available to measure their impact? Who are the stakeholders involved at the various levels from local to global? What is their relationship to one another? Do all of the stakeholders have a voice in conservation? If
not, who decides conservation guestions?
• Who owns wildlife and do those who bear the greatest costs of conservation see equitable
Compensation for men burden? If not, where do momes accrue?
Sub Deinte
Sub-Folicis
occurring in the conservation area. Be careful to differentiate between transitions and actual trends.
• Taking into account the historically trend extrapolation can be problematic, what is the likely trajectory of the identified trends?
• At what scale(s) do these trends operate? Are they likely to negatively impact wildlife? If so, in what way?
2. Make conservation recommendations for addressing the negative aspects of these trends
(for the present and into the future). Identify the financial and human resources available
to meet those recommendations. (Avoid becoming too detailed.)
• What considerations (e.g. agricultural expansion, urban sprawl) emerge from the analysis that will need to be addressed in the planning stage? At what scale do those considerations need to be addressed?
• What sources of backing, economically and otherwise, are available from international sources, national, local, NGOs, etc.?
• Given what has and has not worked in the conservation area in the past, what resource allocation suggestions (financial and human) can be made?

Table 1 (Continued)— A Contextual Framework for Wildlife Conservation.

(Point A), the Contemporary Social Driving Forces (Point B), and the Future Trends (Point C). Associated with each of these main points are sub-points and under the subpoints are questions, both of which are designed to help guide the information gathering process. This chapter examines each of the main points in turn using the case study from Kajiado to illustrate them. Before beginning this discussion, however, a few general points about the Framework and my research need emphasis.

First, as established, conservation plans to date have tended to focus on the local contemporary situation. By organizing the data gathering exercise into a continuum, encouraging researchers to look both backward and forward, rather than simply through the window of the present with its limited perspective, the Framework is designed to capture the dynamic reality, both social and ecological, at work in the conservation area. Likewise, each Point with its various sub-points brings in both social and ecological information to examine the relationship between the two. This juxtaposition offers the potential to refine the discourse between the social and biological sciences. Also, integral to each point is the emphasis on temporal and spatial scale.

Second, although my program of study was interdisciplinary, the majority of my experience lies in the social realm (Geography, Anthropology, and History). Therefore, I am qualified to discuss the human aspects of conservation than the ecological. That being said, my background is sufficient to incorporate an evolutionary view of ecosystems, emphasizing the importance of understanding and maintaining ecological processes, into the Framework. However, this component will need further refinement before field study is undertaken.

Third, I must emphasize that the Framework is by no means offered as a quick fix for conservation problems. No complete conservation plan will emerge from its use, although the general shape may and the issues to be incorporated into a plan should appear. Similarly, the Framework will not provide a recipe for the implementation of any plan derived from its use. Instead, the Framework is designed to be a framework to facilitate an understanding of the complexities (social and ecological) involved in a conservation area and a tool or database for assembling and analyzing the information needed for that understanding. It is not designed to simplify the complexities involved but rather to help clarify them in context with one another.

Point A: The Historical Perspective

Historical circumstances are what bring us to the present. The Historical Perspective, then, incorporating natural and human history is Point A of the Framework. Before one can understand the present condition and circumstances of a conservation area, one must first examine the historical events that created them. Of course, the relevant historical circumstances and time period will vary for each study area, as well as the sources available to examine them. In any case, the sources that must be consulted to obtain the most complete picture of the past go beyond what is commonly thought of in the West of as history. Beyond the offerings of historians, the work of geographers, anthropologists, archeologists, sociologists, and the oral traditions of local people must be examined, as well as the work of wildlife biologists, ecologists, and others. It is possible that some data will have to be collected first hand to fill in gaps and help prevent obtaining a skewed perspective, which will likely require stakeholder input.

The contradictions that will inevitably emerge between sources must be examined with a critical eye. No authority should be accepted or dismissed out of hand, particularly where indigenous sources are concerned, if for conservation to succeed it must succeed at the local level (Western, 1989c; Western and Wright, 1994; Gibson, 1999). The purpose of the information gathering at Point A is not to write a history of the conservation area in the academic sense, because that is only part of the historical perspective. On the contrary, the over arching purpose is understand how the present situation in the area came to be from as many perspectives and at as many scales as possible. What people believe happened or the way events are perceived by different groups can have as much or more influence on their behavior as what actually happened (Sahlins, 1976: 55-125). Additionally, the natural history of the conservation area must be put into the mix, with particular attention given to the way people in the past interacted with wildlife and the environment (Cronon, 1996: 23-56). This point in the Framework asks, "Where have we been?" What should emerge from the answer to this question is a picture of social and ecological trends that can aid in explaining environmental and cultural conditions observable in the conservation area today. The Historical Perspective, Point A, with its five sub-points and guiding questions, is shown in table 2 below.

The discussion that follows will present an historical perspective for Kajiado using the elements listed in table 2. However, as the Framework is based a broad literature review and designed for conservation areas in general, some of the guiding questions under the sub-points are more pertinent to Kajiado than others. The discussion begins by concentrating on the human aspect and examines the pre-colonial, colonial, and

A Contextual Framework for Wildlife Conservation
Point A: The Historical Perspective (Where have we been?)
Sub-Points
1. Identify the relevant historical time frame for studying the conservation area.
• At what point historically do the changes visible today began to occur?
• What informational resources (historical, ethnographic, paleo-environmental, wildlife
monographs, indigenous, etc.) are available to determine the appropriate time period?
2. Examine the environmental setting of the conservation area, identifying not just soil and
vegetation types but the ecological processes at work and how they have changed.
Differentiate between anthropogenic and natural factors when possible. (Do not neglect
indigenous knowledge.)
• What scientific and local sources of information are available?
• What do they tell us about how and why the landscape has changed during the historical
period?
• Have the hardran processes been simplified and in what way?
3. Analyze the human history of the conservation area during the historic period using as
events are occurring and be careful not to underrepresent the indigenous viewpoint.
• What materials are available from historians, social scientists, local sources, etc?
• What cultural changes are observable? What factors are responsible for those changes and
at what scales do they operate?
• Has the mix of cultures changed?
• How have the relations between different groups (tribal, ethnic, religious) changed? What
are the factors involved and at what scales do they operate?
• What is the development history of the conservation area and who benefited? Who did not
benefit? What can we learn from this?
4. Examine the native wildlife communities in the study area during the historical period.
Determine the composition and distribution wildlife populations and how that has changed.
• Has the composition or movements of wildlife species changed? What factors are
responsible for those changes and at what scales do they operate?
• What information is available from wildlife biologists and managers? Is there information
on habitat types and changes within those types? Is data available on the historical range of
variability of native wildlife species? what information is available from local sources?
• what is the conservation history of the study area and what can we learn from it? what metrics are available to measure the impact of previous plans?
• Have wildlife interests been included in conservation legislation and policy?
 Have which it is been included in conservation legislation and poincy: If wildlife tourism/utilization has been a factor in the conservation area, where do monies
accrue and how has this impacted wildlife?
• Are there protected areas (parks, reserves) within or adjacent to the study area? What
policy governs them and what is their relationship to non-protected areas?
5. Examine the relationship between the human and natural history of the conservation area
and the trends that emerge. Pay attention to the role scale plays in this analysis.
• Historically, what were local attitudes toward the natural world and wildlife? Toward
protected areas? How has the natural world in general and wildlife in specific been viewed
historically?
• How have these attitudes effected the relationship between the cultures in the conservation
area with their environment and with wildlife?
• Have those attitudes toward the environment and wildlife changed? What factors are
involved and at what scales do they operate?
• What is the relationship between the conservation and development histories and how has
that impacted local people and wildlife?
• What trends emerge from the analysis?
able 2—Point A of the Contextual Framework for Wildlife Conservation.

post-colonial history of the district. Then the environmental setting and wildlife/conservation history will be brought into the picture. The reason for this division is ease of explanation and should not be seen as trying to compartmentalize the different aspects of the human/environment dynamic at work in the district. The synopsis at the end of the historical analysis of Kajiado relates the discussion back to table 2.

Pre-Colonial, Colonial, and Post-Independence History

The conditions observable in any geographical area at any given point in time are based on what has come before. Therefore, ancient history is as important as recent history for an overall understanding of the progression of events. Seen in this light, the selection of a "relevant" historical time period on which to base your historical perspective is subjective. On the other hand, I am concerned with conservation in the Framework and the increasing role of the anthropogenic factor in the human/environment dynamic involved with rapid environmental change that impacts wildlife. Under these criteria, a brief review of the literature clearly shows the greatest change, in terms of magnitude and breath, for all of Africa including Kajiado begins in the colonial period.

Archeological evidence based on ceramic and faunal analysis and paleenvironmental evidence based on pollen analysis and climatic studies indicate that East Africa has been stable for at least the past 2600 years. During the this time period, herding has been the dominate human occupation. The consistency in the faunal assemblage and climatic analysis further indicate that this occupation had no detrimental impact on wildlife or the environment and that hunting coincides with times of environmental stress. The earliest ethnographic literature from the nineteenth century

supports this evidence. Stability in the region lasted until the beginning of the colonial period, when indigenous economies and linkages became disrupted, environmental degradation due to human activity became widespread, and wildlife populations were devastated (Collett, 1987: 129-139). The argument for the impact of colonialism can be expanded to encompass all of Africa south of the Sahara in the past 200 years. Boserup makes clear that one cannot hope to understand Africa's cultural and environmental situation without examining the history and policies of the colonial period (Boserup, 1981: 144-145). For Kenya, this timeframe begins in the late nineteenth century.

The Pre-Colonial and Colonial Periods

In the following discussion, I will examine the policies, actions, and attitudes of the colonials in Kenya in order to help explain the historical context of present day Kajiado. This examination, however, will only explain part of that context. An examination of the actions of indigenous peoples within the parameters set by administrative policies and actions is also necessary to understanding the changing and often contradictory social conditions in Kajiado (Kituyi, 1990; pp. 225-231). Thus, the historical perspective for Kajiado will be presented from the standpoint of opposing or competing interests: colonial versus native, local versus national, farmer versus herder, and, when wildlife is brought into the picture in the next section, human versus wildlife. This approach requires briefly delving into Maasai history prior to the colonial period in order to put their interactions with the colonial government and later with the independent government in context. Pastoralists have occupied East Africa for at least the past 4000 years and the archeological record for the past 2600 years is good. It indicates they have placed little pressure on their environment or on wildlife throughout this timeframe. The Maasai represent the most recent group of these nomadic pastoralists. Originally agropastoralists, the linguistic evidence indicates the first Maa speaker migration entered the Rift Valley about 1600 AD with others following (Collett, 1987: 130-137). The specialized pastoral economy present at the beginning of the colonial period did not appear until the seventeenth century. As it developed, Maasai hegemony spread during the eighteenth and nineteenth centuries (Galaty, 1993: 61-85).

The Maasai world was highly ethnocentric and divided into people of cattle and people who are without. At the same time, this rigidity is tempered by the ease with which a non-Maasai could become a person of cattle, such as owning cattle or joining a Maasai age-set. Thus, Maasai ethnicity was somewhat fluid prior to the colonial period (Spear, 1993a: 120-133; Waller, 1993a: 226-248) and based more on cultural or ideological identity than geographical boundaries or political demarcations (Kituyi, 1990: 36-37). The Maasai eschewed farming and largely still do, and wealth and social relations were based on cattle not land. Still, needing agricultural products especially during the recurrent droughts in East Africa, they evolved a complex economic and social structure that included trade and symbiotic relations with farmers and hunter-gatherers to form the overall regional economy (Kituyi, 1990: 37-44, 51-59; Spear, 1993b: 1-24). Although they kept a standing military and had a fierce martial reputation, they maintained mostly peaceful relations with Dorobro hunters and gatherers and Kikuyu,

Chagga and other Bantu and Niolotic agriculturalists with whom they shared the region (Kituyi, 1990: 37-44, 55-59).

The only neighbors they had frequent clashes with were a group of agropastoral peoples who collectively became known as the Kalenjins. The reason for these clashes was direct competition for resources, as the Kalenjins needed access to rangeland themselves. In fact, the whole purpose in maintaining a standing army was to protect Maasai access to needed resources, not to occupy land in the European sense of political domination. Cattle had value, not land, and mobility was a major survival strategy in a region prone to drought. The military protected that mobility and the access to the resources that supported the pastoral economy it brought with it. By the same token, boundaries were quite fluid in the pre-colonial period. They were established by a complex economic (based on trading, kinship, stock associations) and military relationship among the Maasai and with their neighbors and fluctuated according to the resource needs of cattle production (Kituyi, 1990: 33-44, 37-44, 55-59).

Internally, Maasai society is broken down into a section/tribe or olosho, with the plural being iloshon (constituted by a group of neighborhoods), the neighborhood (a group of bomas), the boma (a group of households), and the household. All the Maasai iloshon together constituted what was understood by the Europeans to be Maasailand before colonization. An olosho ranged over an area that encompassed all necessary wet and dry season resources for their cattle. Land was communally owned and cattle, as indicated, were the basis and goal of production, as well as forming the social foundation of Maasai society, and were individually or household owned. Access to resources for

the maintenance of herds was controlled at the neighborhood level (Kituyi, 1990: 33-44, 114-115; Campbell, 1993: 259-264; Kimani and Pickard, 1998: 202-204).

Maasai society is highly patriarchal and women are traditionally accorded little formal say in its workings. Males are divided into five age-sets, spanning ten-year intervals, which can be thought of as rungs on a ladder that each cohort climbs as they age. The age-set system defines the relations between the different age-groups through institutions such as patronage, marriage, and stock associations. Likewise, within each rung are specific rights and obligations, which increase with age, as does wealth. The age structure provided the basis for the gerontocracy that decides disputes and enforces tradition through a Council of Elders, often using group cohesion as a litmus test. Although the Maasai recognized individual wealth before the colonial era, they also had taboos against avarice and ostentation (Kituyi, 1990: 144-122, 138-150, 161-177, 205-209; Galaty, 1993: 79-83; Kimani and Pickard, 1998: 202-204).

The arrival of the colonials completely disrupted the socioeconomic structure of Maasai East Africa, eliminating some aspects like the military but only altering others with time. This is the reason the present tense is used at times in the preceding paragraphs, to show institutional and other aspects of Maasai society that continue today, though often in an altered form. A combination of the competition between colonial powers, epidemics, drought, and internal strife weakened the Maasai in the late nineteenth century, allowing the British to build a railroad from Mombasa to Uganda and to designate the land it passed through as a protectorate and later a colony in 1920 (Galaty, 1993: 61-86; Spear, 1993b: 9-14; Trench, 1993: 1-18, 68-70). The Treaty of Berlin in 1895 allowed the division of what would become Kenya and Tanzania between

the British and the Germans. Prior to any negotiations with the Maasai, the British immediately claimed the area around Nakuru as crown lands, as Kenya was slated to be a settler colony. However, extensive European immigration never occurred and, as a result, Kenya has the same development issues as most African countries today (Kituyi, 1990: 44-46; Berger, 1993: 6-7).

Aside from securing imperial interests against the Germans, this initial alienation was justified, as latter annexations would be, largely on the grounds of poor land use on the part of the Maasai. A stereotype of them as bellicose and non-productive, shunning anything to do with trade or agriculture prevailed in the colonial mind despite any evidence to the contrary. They felt an obligation to put the land to good use, protect settled agricultural tribes from the predatory Maasai, and bring the "gift" of colonialism to the region. Similar justifications would be used to alienate land for wildlife as well (Collett, 1987: 137-144). Despite the designation of Maasailand as inviolate with its development to be left up to the Maasai themselves, the 1902 Special Districts Ordinance made clear that colonial policy from the start was to demilitarize and settle the Maasai and at least convert them to ranching, if not make them agriculturalists (Collette, 1987: 137-144; Campbell 1993: 260-264).

More alienations before and during the period known as the "Maasai Moves" (1903-1913) eventually pushed the herders onto a southern reservation that basically covers the present Narok and Kajiado Districts. These alienations reduced their territory to less than 10 % of its pre-1890 extent and saw the single greatest losses of land for the Maasai. In the end, some 7000 square miles of territory were lost, along with immeasurable pastoral resources (Kituyi, 1990: 44-46.).

At the same time they were protecting agriculturalists by demilitarizing the Maasai, the colonials were also annexing the best agricultural land for their own use, forcing indigenous farmers to move elsewhere including eventually Kajiado and beginning a process of agricultural expansion. The migration of farmers into Maasai territory has historical precedent prior to the colonial arrival. The difference between prior migrations and those wrought by the demographic upheavals of the colonial period is their duration and magnitude, which the herder society could not absorb or defend against with the loss of its military strength (Kituyi 1990: 46-51). This process of agricultural expansion that began in the colonial period continues today increasingly impacting herder access to resources and has been a continuing source of conflict and ethnic strife in the district (Kituyi, 1990: 102-108; Campbell, et. al., 2000: 3-5).

Two other important changes followed the demographic upheavals besides the spread of agriculture. First, there was the colonial policy of settlement and control, against which the Maasai held fast to their traditions, demonstrating the remarkable adaptability and tenacity that has marked their history. However, confinement to a reservation created fixed boundaries on Maasai territory for the first time and served to isolate them from other groups with which they traditionally interacted. The combination of isolation and the persistence of traditional lifeways helped solidify Maasai ethnicity (Kituyi, 1990: 33-35, 46-51; Spear, 1993a: 124-132; Spencer, 1993: 156). Second, the demographic shifts combined with the isolation (brought on by fixed boundaries and limitations to movement and trade) cut the Maasai off from the traditional regional economy, whose importance to the pastoral economy was discussed above. Thus, there was a need to replace the access to agricultural products lost with these changes. This

need would eventually contribute to the spread of agriculture among the Maasai themselves. Before this shift occurred though, alienation from traditional exchange modes brought socioeconomic changes on top of and related to the demographic changes. These changes included the introduction of the market principle, institutional changes, changes in tenure and changes within Maasai society itself (Kituyi, 1990: 46-51, 59-70, 85-95, 138-150, 161-177; Campbell, 1993: 260-264).

Based largely on their stereotype of pastoralists in general, the colonials felt that the Maasai had an irrational affinity for cattle. This affinity, in the colonial mind, resulted in poor range management and oversized herds that threatened the environment. As the Maasai began to recover from the epidemics that had decimated their numbers and livestock, overgrazing was noticed and the views on herder irrationality were reinforced. As a result, colonial policy became aimed at encouraging the Maasai to raise cattle for commercial sales. The integration of a market economy into Maasai society, they felt, would reduce the number of cattle, lessen the overgrazing, and solve the environmental degradation problem (Collett, 1987: 137-144; Campbell, 1993: 260-264). These policies, of course, ignored the loss of resources and mobility to the Maasai during the moves and the fact their pastoral economy thrived for hundreds of years without degrading the environment.

The policies of the colonial government aimed at bringing the Maasai into commercial ranching in Kenya were largely as ineffective as similar attempts to alter herder lifestyles were throughout Africa (Kimani and Pickard, 1998: 201-202). The problem was not that the Maasai would not sell meat to the colonial market. It was that, with the colonial emphasis on agricultural development, pastoralists experienced

increasingly deteriorating terms of trade and did not receive a fair price for cattle. The prices for agricultural goods rose dramatically compared with that of livestock and there was little incentive for the Maasai to sell. Moreover, Maasai elders also put limits on sales, as well as discouraging any entrepreneurial activities that would be detrimental to community welfare (Kituyi, 1990: 59-64, 73-81).

Nevertheless, the introduction of the market principle combined with the disruption of traditional linkages did lead to some changes. A limited amount of cattle were sold at livestock auctions and dairy products sold in the markets order to obtain cash. Cash was then used to pay for needed agricultural goods and the heavy taxes leveled on the Maasai by the colonial government. Since 1900, the Maasai had become increasingly dependent on agricultural products as it became cheaper for them to get their caloric intake from grain than livestock. As for the high taxes, along with being intended to make the colony self-sufficient, they were intended as another encouragement for the Maasai society and the importance of agricultural products and cash likewise increased, land also began to take on added importance. The gradual shift from land as a resource for cattle production to land as a commodity is arguably the most significant role these factors played in the development of the district (Kituyi, 1990: 59-64, 73-81; Campbell, 1993: 258-264).

Farmers began migrating into Maasailand in ever increasing numbers as the colonials displaced them. At first the government encouraged these migrations, seeing the farmers as exemplars of proper land use to the Maasai and in some cases, even though they had no right to settle them without consent, alienated further tracts from the Maasai

to accommodate them. This alienation was not simply an arbitrary decision on the part of the white colonials, though. Colonial agents of agricultural tribes played a significant role in this alienation, which fostered not only the Maasai distrust of the government, already entrenched since the last alienations, but ethnic rivalry as well (Campbell, 1981a: 42-50; Campbell, 1981b: 214-224; Collett, 1987: 141-142; Kituyi, 1990: 44-51). These migrations lead to conflict between herder and farmer over resources and environmental degradation of such a degree that a Declaration of Emergency was declared in 1952 that resulted in the expulsion of thousands of farmers from Kajiado (Campbell, 1993: 262). Nevertheless, with independence the migration of agriculturalists would begin again and agriculture would even spread to the Maasai themselves, beginning with intermarriage with members of farming communities, leasing land to tenant farmers, and progressing to actual Massai cultivation (Kituyi, 1990: 90-102).

Another goal of the colonial government, along with settling the Maasai and bringing them into a market economy, was to replace communal with individual tenure. They viewed communal tenure as being as environmentally dangerous as the pastoral lifestyle, with its affinity for cattle, that embraced it. After World War II, they set about trying to create an African landed middle class through a rural development program that included an extension aspect. The next step came in 1954 with the implementation of the Swynnerton Plan, which made individual tenure official. In Kajiado, the Swynnerton Plan introduced the individual ranch (IR) as a limited experiment. As the name implies, IRs offered individual tenure to select Maasai on large tracts of some of the best land in the district. It also provided the owner with investment options and access to the market economy not previously possible, which the government hoped would further
commercial ranching. On the other hand, despite the new investment options, traditional inhibitions to individual gain limited investment (Migot-Adholla, 1981: 48-49; Ngutter, 1981: 28-30; Kituyi, 1990: 67-70, 95-98, 161-187).

Although the ranching policy failed to completely reshape Maasai society, it presented a real challenge to traditional Maasai values toward cattle and territory for the first time, as ownership of land became a means of individual advancement (Campbell, 1993: 262-263). With this challenge also came the notion of trespass, and the beginnings of unequal accumulation and resource exploitation seen today. Also, it led to the issue of tenure becoming one of the main sources of conflict in Kajiado (Kituyi, 1990: 197-205).

The institutional, economic, and demographic changes discussed above combined to increasingly change the structure of Maasai society into the post-independence period. For example, with these new conflicts and social relations came the option to use governmental judicial recourses. This option challenged the traditional conflict resolution institutions of the Council of Elders and the gerontocracy in general, whose emphasis on social cohesion rather than purely individual rights left them ill-equipped to deal with these changes and the new types of conflict they brought (Kituyi, 1990: 114-122, 197-223). As I will explain below, the judicial system and its manipulation have come to play an important role in the changing socioeconomic structure of Kajiado (Galaty, 1999; Galaty and Ole Munei, 1999). The seeds of change and conflict planted in the colonial era came to fruition in independent Kenya. At the state level, these changes would translate into a national identity and, at the local, a new basis of social identification and territorial claims (Kituyi, 1990: 46-51).

The Post-Independence Period

Some have argued the colonial world was simply reconfigured into the developing world (Peet and Watts, 1996: 17-22) and others go further by arguing that the imposition of the market economy disguises the destruction of traditional systems under the guise of development (Galaty, 1999: 2-6). In any case, there seems to be somewhat of a continuum of the colonial world into the post-colonial at least in Africa. Several independent African governments continued many of the policies of their former colonial overlords and often maintain closer ties with them than with their regional neighbors. After achieving independence in 1963, the newly formed one party Kenyan government, with a Kikuyu president (Kenyatta) and a Kalenjin vice president (Moi), was among those that retained many of the same policies and attitudes of the colonial period, particularly where pastoralists and wildlife are concerned. Some significant policy changes did occur though in such areas as land redistribution, where Euro-centric policies were abolished and farmers expelled during the Emergency were allowed back into Kajiado (Ngutter, 1981: 31-32; Collett, 1987: 141-144).

Due largely to the continuation of colonial policies, post-independence development programs in Kenya have had a decidedly settlement and agricultural bias. Their goals, like those of the colonial government, have been to settle the nomads and expropriate lands for agriculture when necessary. The objectives included agricultural development in semi-arid areas. On the other hand, while developing Maasai agriculture was given lip service, little official action was really taken. Nevertheless, agriculture did spread among the Maasai, as mentioned previously, through the diffusion of the market principle and the group ranch (GR) program. Still, traditional taboos tempered that

spread, as evidenced by the fact that most farmers in the Kajiado continue to be non-Massai (Campbell, 1981a: 39-41; Kituyi, 1990: 95-98).

The GR program is one of the most significant examples of the independent Kenvan government's development goals. Although GRs were based on the IR example from the colonial period, they emphasized group rather than individual tenure. Groups actually began registering land in 1964 (as IRs), but the 1968 Land Adjudication Act and Land Group Representatives Act legitimized the process of the conversion of rangeland into private property and claims were granted to groups with traditional rights to these lands (Kituyi, 1990: 67-70). The division of communal lands was handled through Kenya Livestock Development Program (KLDP), with the assistance of the World Bank. Under this program, groups composed of Maasai heads of household could jointly register lands. Likewise, males over the age of eighteen were registered as GR members. A group ranch constitution mandated that GRs be managed by elected committees. In keeping with Maasai tradition, members herded collectively but cattle remained individually owned (Campbell, 1993: 264-269; Kimani and Pickard, 1998: 204-205; Galaty and Ole Munei, 1999: 68). Through this process of adjudication, by 1981 77.18% of Kajjado and 36.8% of Narok was privatized as either GR or IR land, which has translated into a reduction in the communal resource base (Kituyi, 1990: 67-70; Campbell, 1993: 264-269).

There were two problems with the GR program from the start, aside from the reduction of communal resources to which I will return shortly. The first problem was the opposing objectives of the government and the Maasai upon entering into the program. The government, as in the past, sought to reduce stock levels and environmental

pressure by promoting commercial ranching and to increase the Maasai economic contribution to society. In short, their objective was integrate the Maasai into Kenyan society and bring them further into the market economy. An additional related goal was to prevent herders from acquiring individual holdings of insufficient size to be ecologically viable (Kimani and Pickard, 1998: 204-205). Ironically, the sub-division of the GRs is resulting in exactly these sorts of nonviable individual holdings (Kituyi, 1990: 67-70; Kimani and Pickard, 1998: 208-210). The Maasai objective, on the other hand, was to protect their pastoral subsistence economy. They saw the GR program as a way to do this by preventing further losses of territory to farmers and wildlife (Kimani and Pickard, 1998: 204-205).

The second problem is ecological and has to do with the way the boundaries were drawn for the GRs. Although they were supposed to comprise the traditional grazing land of the owners, in reality they were often insufficient in size to be self-sustaining. In fact, of the fourteen original GRs only six encompassed both wet and dry season grazing lands (Kimani and Pickard, 1998: 204-205). This miscalculation of environmental realities resulted in herders falling back on traditional relationships and crossing GR boundaries during times of drought to gain access to vital resources outside a specific ranch (Campbell, 1993: 260-269). However, the subdivision of the GRs, which followed relatively close behind their creation, combined with the spread of agriculture is threatening this traditional recourse and the environmental integrity of the land the GRs were designed to protect (Kimani and Pickard, 1998: 208-210; Galaty and Ole Munei, 1999: 68).

Calls for sub-division of the GRs began in the 1970s for four main reasons beyond the two initial problems listed above. First, the committees elected to manage the ranches proved to be generally inefficient and corrupt. Second, people felt they needed individual titles in order to obtain loans and only those household heads who originally registered the land actually held title to it (Kimani and Pickard, 1998: 204-205). Land ownership offered two perceived advantages, collateral for loans and investment protection against defaulting (Kituyi, 1990: 95-98). Third, another generation of Maasai had come of age and wanted GR membership, which was not provided for in the GR constitution (Kimani and Pickard, 1998: 204-205). Growing numbers of young Maasai began finding themselves in the position of having cattle but no legal claims to land (Campbell, 1993: 266-271). Fourth, there was the perceived threat of further land grabs due to increased immigration into the district and creation of additional parks and reserves since independence (Kimani and Pickard, 1998: 204-205).

GR subdivision began informally far in advance of official sanction. In fact, the government initially opposed GR subdivision on ecological grounds, although it would change its position for two reasons. First, the GR constitution allowed for the dissolution of ranches, which is essentially synonymous with sub-division. Second, contradicting the policy objectives listed above for creating the GR program, there was a strong desire, carried over from the colonial period, for all tenure to be individual (Kimani and Pickard, 1998: 204-205). With this desire in mind, President Moi called for an end to group holdings in Kenya in 1985, ignoring the environmental reasons for forming such holdings in the first place (Galaty, 1999: 2-6). The only proviso for subdivision was that

individual holdings not be too small to be ecologically viable (Kimani and Pickard, 1998: 205-208).

Official sub-division began in 1984 with no clear governmental policy in place or forthcoming. Seven GRs started undergoing sub-division at that point and by 1996 the number had risen to twenty-four. One study showed that individual holdings have averaged between 100 and 150 hectares (ha) historically. It also showed that, through time, the number of holdings has increased while the size of those holdings has decreased. The results of the study bring the ecological viability of many holdings into question, particularly as agricultural spread has accelerated since subdivision began (Kimani and Pickard: 205-208). I will return to the question of the ecological viability of individual holding in a moment, but first I will examine the subdivision process in more detail.

The lack of national level policy direction left the basic questions of sub-division unanswered. These questions include: who should be eligible to receive individual holdings, how much land to a lot to each individual once it has been decided who will get land, and who will answer these questions? Several sources have addressed the complex issue of GR sub-division including: Kimani and Pickard (1998), Kituyi (1990), Galaty (1999), Galaty and Ole Munei (1999), Campbell (1993), Campbell et. al. (2000). Generally speaking, with no clear guidelines in place the GR committees began answering these questions on their own and often arbitrarily. Not surprisingly, charges of favoritism and impropriety followed and the courts became involved. In at least one case, the courts forced the committee to divide land in a more equitable manner. However, this precedent is not the norm. In fact, GR subdivisions have moved

increasingly toward being decided more by the courts than the legislators. Moreover, since cases often end up tied up in court, committee decisions tend to stand (Galaty and Ole Munei, 1999: 68-69).

Along with the increasing involvement of the court system, another related trend is that many subdivided individual holdings are being sold, usually for economic and ecological reasons. Those with less money and poorer land are selling to those who are better off. The result has been that land is being consolidated into fewer hands, landlessness is becoming a concern, and disparity is spreading between Maasai households in not just wealth but education and opportunity as well (Kituyi, 1990: 154-161). Of greater concern to some researchers is the fact that an increasing amount of land is being sold to non-Maasai. By 1996, 7% of the total area of the GRs was owned by non-Maasai, which I will return to below. What is important to note here is that a number of these sales appear legally questionable, returning to the issue of judicial involvement in subdivisions and lack of policy direction (Galaty and Ole Munei: 68-70).

Many of the concerns about legal impropriety come from the fact that patronage politics has been a factor in the subdivision process and subsequent sales of individual holdings because many local politicians need the support of non-Maasai in the district. Additionally, state level corruption and influence pedaling have played a role in the subdivisions and sales, as powerful individuals and groups inside and outside Maasai society manipulate the legal system for their own ends. Corporate entities as well, with strong political ties and international backing, are sometimes involved in these purchases. Ethnic rivalry has been an increasing factor, as agricultural tribes, who make up a component of each group discussed in the previous sentences, seek to further their own

interests in the district. The result of all this legal maneuvering in a vacuum of policy direction by different interests, especially with corruption as an added factor, has been that land grabs have trumped land reform and the uncertainty that exclusive tenure was to alleviate has instead increased. Some researchers feel that this result represents a very real threat to the majority of the Maasai community (Galaty and Ole Munei, 1999: 68-70).

Having examined the policy and legal problems that have plagued subdivision, I will now return to the issue of the rapid agricultural expansion that has also accompanied the GR breakups and the question of ecological sustainability that goes along with it. Agriculture has spread through the district in two main ways. The first way is through non-Maasai agricultural groups moving into Kajiado. As stated, a significant amount of subdivided land is being sold to non-Maasai, and those who have purchased land are mostly farmers (Kimani and Pickard, 1998: 208-211). In addition to those owning land, a significant number of immigrant farmers in the district lease Maasai land, on which they have no legal standing. Their tenure status, incidentally, further complicates sub-division (Campbell et. al., 2000: 6-8). Second, cultivation has spread through its adoption by the Maasai, beginning with intermarriage with agricultural tribes and leasing to tenant farmers and, since the 1970s, through direct involvement with cultivation. Historically, agriculture has been so controversial among the Maasai that wars have even been fought over it. Until recently, although farming was present, it was not widespread because of the ideological taboo against it. However, the need for agricultural products has slowly eroded traditional barriers to some degree (Kituyi, 1990: 85-89).

As a result, agriculture increasingly became seen as a viable diversification option to avoid food shortages, particularly among those with smaller holdings, where research shows pastoralism may not be economically or ecologically viable. Remember also that as subdivision has continued, the number of holdings has increased and the size of holdings has decreased. Interestingly enough, the same research shows that cultivation is rarely a viable alternative to cattle in the district (Kimani and Pickard, 1998: 205-210). The problem is that there is also strong evidence that small-scale farming (less than 2 ha) is not a viable, economically or ecologically, either and resorting to this option may in fact demonstrate the economic non-viability of many Maasai. Moreover, while largescale agribusiness concerns (10 or more ha) and medium size farms (2 to 10 ha), both of which are beyond the means of most Maasai, may offer substantial short-term profits, their long-term ecological sustainability is also highly questionable (Kituyi, 1990: 102-107).

Long-term viability or not, agriculture has spread rapidly especially in the past two decades. Along with herding and ecotourism, which more will be said about below, it is now one of the three major land uses in the district, as well as the leading industry in Kajiado. However, with agriculture has come fencing, increased settlement, land cover change, and ever increasing herder/farmer conflict (Campbell et. al., 2000: 4-5). The fencing that has happened already and is likely to follow continued sub-division and the spread of agriculture, causes fragmentation of the rangeland that threatens pastoralists and wildlife alike by hampering the mobility that is necessary to the success of both. The threat to the latter I will discuss in the next section. As for the former, fencing threatens the de facto communal style grazing that has continued throughout the GR era, even on

subdivided lands. The restricted mobility fencing brings will diminish this coping option and further limit herder access to resources if not eliminate it entirely in some cases. Cultivation and settlement expansion also reduced both wildlife habitat and the communal resource base (Kimani and Pickard, 1998: 208-210). Also, with only so much good land with access to water available, resource competition between farmers, herders, and wildlife has increased steadily since the colonial period (Campbell et. al., 2000: 3-6). This conflict along with the questionable sustainability of agriculture, especially on small holdings, has lead some researchers to argue that present trends indicate possible social, ecological, and economic disaster in the future (Kimani and Pickard, 1998: 208-210).

More alternatives are available to the Maasai besides herding and cultivation, however, through the entrenchment of the market principal. Just as the legal institutions of the state have impacted traditional conflict resolution, which I discussed in the previous section, the entrenchment of the market principle has brought changes and options as well (Kituyi, 1990: 59-64, 111-123). Among those options are: selling milk and dairy products (which is mostly done by women), acting as a middleman in the livestock trade, shopkeeping (limited by education and initial investment), butchering, ranching (a limited option due to the large investment required), and wage labor (the extent of which is limited by education and other social aspects) (Kituyi, 1990: 76-81).

The tourism industry also offers an avenue for economic diversification to the Maasai. In fact, ecotourism is the second largest industry in Kajiado, next to cultivation (Campbell et. al., 1999: 6) and brings the most foreign exchange into Kenya (Berger, 1993: 14-16). Ecotourism and agriculture have far outstripped herding economically in the district. On the other hand, of the three major land uses in the district, only herding

has been historically shown to have long-term sustainability. In spite of its historical record though, its sustainability comes into question if mobility and communal tenure are taken out of the picture. Of the remaining land uses, agriculture and ecotourism, studies show only tourism has the potential to be sustainable and that, ecologically, herding and wildlife are the best land uses for Kajiado (Western and Thresher, 1973; Collett, 1987: 144-146; Lindsay, 1987: 156-158; Kimani and Pickard, 1998: 210-211; Galaty, 1999: 1-2). However, as I will explain in following sections, the ecotourism industry and wildlife have different interests that need to be addressed in order to insure their sustainability.

The preceding historical discussion of Kajiado demonstrates the complexities involved with the dramatic socioeconomic and demographic changes impacting the district, beginning in the colonial period and continuing into post-independence Kenya. Emerging from this complexity is ever increasing conflict as opposing interests contend with one another: colonial against indigenous, farmer against herder, tribe against tribe, local against national, rich against poor, national against international. Land use and land tenure issues, ethnic rivalry, and corruption at all levels feed the conflict. At this point, I will add an additional layer to the complexity and conflict in order to complete the historical examination of the human/environment dynamic in Kajiado, wildlife and conservation. In the next section I present a brief description of the environmental setting and then discuss the conservation history of Kajiado and human/wildlife relations in the last section.

Environmental Setting and Conservation/Wildlife History

Environmental Setting

According to paleo-environmental studies, the climate in East Africa has remained relatively stable for at least the past 2600 years including its propensity for periodic droughts, as previously indicated (Collett, 1987: 130-136). Kajiado District is dominated by bushed grassland and falls mostly into Ecological Zone V (Western, 1994a: 19), with some areas falling into Zones III and IV. Most of the GRs are found in Zone V. Rainfall is erratic and Kajiado, in the rain shadow of Kilimanjaro, experiences less rainfall, 400mm, than Narok District to the west (Kituvi, 1990: 25-26, 154-156). Permanent water and dry season grazing make Kajiado a good wildlife area. The District can be divided into three main essentially self-contained ecosystems, the Athi-Kapiti ecosystem in the north near Nairobi National Park, the Ewaso-Ngiro ecosystem in the southeast, and the Amboseli ecosystem. The first two ecosystems are fed by rivers (Croze, 1977: 36-37). The closed basin of a former Pleistocene lakebed, on the other hand, defines the Amboseli ecosystem. The basin offers the only permanent water in the area through springs fed by runoff from Kilimanjaro. Amboseli has a diversity of wildlife greater than that of Tsavo, even though it is several times smaller, due to the complex soils, vegetation, springs, and swamps (Lindsay, 1987: 150-151; Western, 1994a: 19-20;). The ecosystem is defined by seasonal wildlife migrations of large herbivores, which were traditionally shadowed by Massai herders for hundreds of years. The basin also encompasses Amboseli National Park, the only national park within the district. Along with its rich wildlife diversity, Amboseli is important from the standpoint

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of human/wildlife conflict and as an example of integrated planning (Western, 1994: 15-23).

People and Wildlife Prior to the Colonial Period

Within this environmental setting and against the sociocultural background presented above, the history of wildlife and conservation can be viewed in terms of opposing interests, just as the human history of the district. Many of the same issues that confront the socioeconomic realm, beginning in the colonial era and accelerating into the post-independence era, also confront the ecological realm. Issues such as land use, tenure, ethnic strife, the fragmentation of the landscape, and the competition for resources they bring impact human/wildlife conflict as much as herder/farmer conflict. Along with the obvious opposition of human versus wildlife, there is also opposition between groups over the control of, access to, and the value of wildlife. These interests include: colonial versus indigenous, state versus local, conservation versus exploitation, national versus international, farming versus tourism, and so on, adding a political dimension to the ecological in conservation (see Gibson (1999) in the literature review).

To be clear, when I use the terms "opposing interests" and "human versus wildlife," I am not speaking in terms of choosing between humans and wildlife, as in an either or situation. The fatuous nature of such a dichotomy completely ignores the facts involved and is a myth whose demise cannot come soon enough, as the literature review made clear (see Western, 1989a; Meine, 1992; Terborgh, 1999). On the contrary, I use these terms to discuss stakeholder interests, including wildlife interests, that may or may not be in opposition but certainly need not cancel each other out. Remember that it was

also established in the literature review that one of the greatest challenges to conservation is balancing the short-term economic needs of people with the long-term survival of wildlife (Pearl, 1989: 221-225).

In the following pages I will discuss the history of conservation in Kenya in general and Kajiado in specific since the beginning of the colonial period. I have broken up the discussion into five time periods, excluding this pre-colonial one, based on Berger's (1993) four eras, which cover up till 1987. To these four I add an additional era that I call the KWS period, covering 1987 to the present.

As stated, the archeological record strongly indicates that pastoralists in East Africa have placed little pressure on their environment in the past 2600 years. This evidence applies to wildlife as well, based on faunal analysis showing a continuation of the mix of species over the last two and one half millennia. The record shows hunting occurred only during times of severe drought. The archeological record agrees with the historical records of the first Europeans to encounter the Maasai (Collett, 1987: 129-137). These records indicate the Maasai were not hunters except under certain circumstances (Thompson, 1887). Instead, the Maasai had a benign relationship with wildlife, seeing them as "second cattle." As I said, the herders shadowed the migratory wildlife through their wet season/dry season movements, in patterns that are often indistinguishable from those of wildlife (Western and Kioko, 1977: 43-49; Western, 1994a: 21-23). In fact, as discussed in the literature review, Western and Gichohi argue herders have become an integral part of the savanna ecosystem, which is healthier with a mix of both wildlife and cattle than either alone (Western and Gichohi, 1993).

Conservation Prior to 1945

As discussed in the human history section, the colonials brought a stereotype of the Maasai with them when they came into Kenya. Along with seeing them as backward and warlike, they also saw their pastoral economy as a threat to wildlife, despite the fact they generally did not hunt and were coexisting with wildlife quite well when the colonials arrived. Human/wildlife conflict basically was confined to farmers at this time. Nevertheless, the perceived threat of pastoralism to wildlife, which the Europeans largely wanted to preserve for their own exploitation, added impetus to the desire to settle the Maasai and bring them into a market economy. Likewise, the perception of pastoralism as a poor land use became a justification to alienate land for wildlife as well as farming (Collett, 1987: 147-144).

Berger calls the era from 1900 to 1945, the "Pioneering Protection" era. This era saw an onslaught against East African wildlife by Europeans (Berger, 1993: 8-9). Unlike the Maasai, most of the Europeans who initially came to East Africa during this period were hunters (MacKenzie, 1987: 41-42). Although they did have a devastating impact on wildlife, the Europeans arrived in the interior of East Africa later than elsewhere in Africa, so their impact was less than in places like South Africa (Western, 1997: 46-51). Colonial farming and settlement adversely impacted wildlife to a large degree, as well (Berger, 1993: 8-9). Another factor besides the late arrival of the colonials that helped preserve Kenyan wildlife was the regulations on hunting beginning in 1898 (Casebeer, 1975: 2). These regulations were supported internationally by a conference held in London in 1900 resulting in the Society for the Preservation of Fauna of the Empire in 1903, whose efforts were largely responsible for the creation of the Game Department in Kenya (Berger, 1993: 8-9).

Along with the Game Department, which enforced hunting regulations, some early game reserves were established. Among them was the Southern Reserve set up under the Special Districts Ordinance of 1902 (discussed in the previous section as granting inviolability to Maasailand in perpetuity) and expanded in 1911 by treaty with the Maasai. This reserve incorporated the Amboseli ecosystem, sparing it from hunting and settlement (Western, 1994a: 15-19). Although, the Game Department protected wildlife, it had limited authority and there was no regulation of land use (Casebeer, 1975: 11-16). Interest in conservation grew as tourists increasingly came to Amboseli to view wildlife rather than shoot them and Kenyan authorities began to look at American-style national parks by the end of the "Pioneering Protection" era (Berger, 1993: 8-9).

Parks and Reserves (1945-1962)

The greatest alienation of land from the Maasai since the "Maasai Moves" (1904-1913) began in 1945. When all was said and done, this second wave cost the Maasai another 7000 square kilometers of irreplaceable resources (Kituyi, 1990: 44-46). The alienation was due to a policy shift from utilization to preservation and resulted in the National Parks Ordinance of 1945. This legislation grew out of colonial and conservationist alarm over growing livestock numbers and human population growth (Western, 1994a: 15-19). Likely though, the stereotype of pastoralists as a threat to wildlife and the feeling of a moral obligation to dilute that threat on the part of conservationists and the colonial government were factors as well. In truth, the real

threat to wildlife came more from colonial agricultural expansion than any other source (Collett, 1987: 137-144).

The ordinance gave National Park Trustees the power to set aside land for national parks and complete authority over that land, its use, and the people and wildlife on it. It also gave them limited authority over national reserves (Casebeer, 1975: 11-16). The main difference between the two was that the national parks were exclusively for wildlife, while the national reserves allowed limited use by indigenous people. Both fell under the purview of the newly created National Parks Service. The Game Department, which remained a separate entity, was responsible for all areas outside the parks, including agricultural land and, along with the county councils, game reserves as well (Berger, 1993: 9-10).

In keeping with the nineteenth century European notion of subjugating nature, the parks were designed to be pristine bastions of ecology. On the other hand, land outside protected areas was open to unlimited exploitation. The idea of sustainable use was not considered at this point (Berger, 1993: 9-10). The problem with the idea of parks as ecological islands, as ecologists now know, is that they are too small for many large mammals (Western and Wright, 1994: 1-12). The ability of these animals to disburse is necessary for ecosystem maintenance and recovery, especially in wet/dry season climates like that in Kajiado (Croze, 1977: 36-37). Also, since it is likely that most wildlife lived outside the parks then as they do today (65 to 80%), a land use policy of unlimited exploitation was exceedingly dangerous to their continued survival (Kimani and Pickard, 1998: 208-210). Thus, there is the need for conservation beyond parks (Western and Wright, 1994: 1-12).

Most of the parks created by this ordinance were on former Maasai land including Nairobi and the two Tsavos. There was an attempt at annexing Amboseli as well, but stiff resistance saw that it was only designated as a national reserve in 1948, and it was a violation of the 1911 treaty that created the Southern Reserve to do even this. The Maasai saw this action as an impending land grab, and in independent Kenya their concerns would be justified (Western, 1994a: 15-19). To ease tensions, as Amboseli grew as a tourist destination, the warden and the National Parks Director proposed revenue sharing. Except for some money given to the county council, this proposal was rejected (Berger, 1993: 38-41). Because of these exclusionary wildlife policies, locals felt they had no stake in the protected areas. By the same token, their resistance, especially that of the Maasai, cemented colonial prejudices that they were untrustworthy, as well as confirming the idea of parks as islands, prompting Berger to dub this era "Preservation through Parks" (Berger, 1993: 9-10). Much to the consternation of the Parks Department, the British, in a conciliatory gesture, gave complete control of Amboseli to the Kajiado County Council in 1961 (Lindsay, 1987: 152-156).

The new wildlife land use brought by the 1945 National Parks Ordinance increased human/wildlife conflict and now with herders as well as farmers, due to the increased competition for resources. With this change also came a change in the relationship between the Maasai and wildlife. There began to be a shift from the traditional benign tolerance to one of animosity and even, at times, open hostility as human/wildlife conflict steadily increased into independent Kenya. As stated in the literature review, Amboseli would become the most controversial of Kenya's parks and

reserves largely because of the degree of such conflict (Western, 1994a: 15-23; Campbell et. al., 1999: 13-26).

The Transition from Colony to Country (1963-1977)

Just as many economic and development policies were continued in the postindependence period, the preservationist and exclusionary wildlife policies were continued as well. That these policies in particular were carried over is especially interesting in light of the fact that pro-independence factions had used public outrage at them to gain support for their cause. Gibson argues that this ironic turn of events came about not because of the effectiveness of these policies, but, rather, the fact that they proved to be an economic boon and a strong political tool in the system of patronage politics that developed after independence (Gibson, 1999: 1-18). Stereotypes about pastoralists were passed on with these policies too, as evidenced by the continuation and expansion of the parks that segregated people from their former environments (Collett, 1987: 144-146). At the opening of this era, there were 4 national parks and 6 game reserves. By its end, the numbers had increased to 16 parks, 21 national reserves, 11 nature reserves, 2 marine parks, 2 marine reserves, and 2 game parks (Berger, 1993: 11-16). Even Amboseli had land set aside and was designated as a park in 1974, as the Maasai had feared. This action met with stiff resistance from the Maasai in the form of attacks on wildlife. As discussed in the literature review, their resistance clearly demonstrated that while the government could set aside land, the fate of the wildlife was up to the people who lived with them (Western, 1994a: 30-36).

Even though there was not a clear break with the past, several changes came about in this era of "Utilization without Management" (Berger, 1993: 11-14). Possibly the most important change was the passage of the Wildlife (Conservation and Management) Act in 1976 that allowed for local wildlife utilization, the creation of the Wildlife Conservation and Management Department (WCMD), and a compensation fund for death and destruction due to wildlife. All these changes were based on the growing realization the wildlife management needed to be coordinated inside and outside the parks and that wildlife must pay its way (Mbuvi, 1977: 34-35; Ochoki, 1977: 21-22; Berger, 1993: 11-14).

Prior to the passage of the Wildlife Act, research had already begun on local consumptive wildlife utilization in Kajiado through the Wildlife Management Project (WMP). The types of consumptive utilization examined included: hunting (Kenya Game Department, 1973), harvesting (Swank et. al., 1974), live capture, and game ranching. Although there were some technical successes and an enormous amount of ecological data was collected, there were numerous problems that hampered the program. Those problems included poaching, increased immigration into the district, and poor management by the WCMD, which meant poor communication with Maasai. Despite the switch to a more participatory approach using workshops in the last year of the program, administrative and political problems kept the report generated by the WMP from being endorsed and the recommended follow up program from being funded. A sharp decline in wildlife populations due to poaching brought calls from conservationists for a ban on all utilization. In 1977, a presidential ban on hunting was issued that ended virtually all wildlife utilization in Kenya (Berger, 1993: 11-14). The feasibility of the non-

consumptive option of wildlife tourism was also examined in this period as well. Of all the options available, ecotourism, by far, showed the most actual and potential economic returns (Western and Kioko, 1977: 43-49; Thresher, 1976).

There are several reasons for the problems of the WCMD in the WMP that would continue into the next period and eventually lead to its replacement by the KWS. The WCMD was formed by combining the National Park Service and the Government Game Department under one agency to manage lands inside and outside the parks, which made sense. Unfortunately, there was a rivalry between the two departments, which were largely European and African respectively. This rivalry carried over into the new agency. Moreover, the government hardly put overwhelming support behind conservation. The result was no clear policy guidelines for issues like poaching, personnel were poorly trained, there was poor interagency and intraagency cooperation, and corruption became the norm. Additionally, the law enforcement bias within the WCMD was not conducive to public outreach, and locals were no more ready to trust authorities (Berger, 1993: 11-14).

Given the problems with utilization and the WCMD, it should not be surprising that the compensation that the Wildlife Act provided ran into administrative problems and did not function efficiently either. For example, while the act provided for direct compensation through committees, it did not provide for the committees themselves (Ochoki, 1977: 21-22). Similarly, while it provided for local utilization there were no resources or institutions available to implement a CBC program (Berger, 1993: 11-14).

Despite these shortcomings and amid the sweeping changes of the GR program discussed in the human history section, plans were laid during this period for the CBC

program in Amboseli. Actually, a version of the plan that would eventually be implemented was in place in 1969, after the District Council abandoned the reserve with the announcement it would become a park. Unfortunately, the Maasai's justified fears of annexation caused this initial plan to be discarded, as they looked to group ownership for security. Had Amboseli been incorporated as a GR in the early 1970s, it would likely have gone the way of the adjacent Namelok Swamp, which was drained and became mostly farmland in a decade. Fortunately for the ecosystem, Western, along with the Ministry of Livestock Development and the World Bank, was able to keep a single large GR around Amboseli and institute the first phase of the CBC program in 1977 (Western, 1994: 23-36).

Wildlife Extension and Community Based Participation (1977-1987)

The period from 1977 to 1987, which Berger calls the era of "Mining the Parks", saw many interesting developments in conservation in Kenya. During this period tourism, which depended not just on the parks but the wildlife in them, expanded and became a major source of foreign exchange in Kenya and remains so (Berger, 1993: 14-16). At the same time poaching, both subsistence and commercial, was rampant and attacks on tourists occurred as well (Kock, 1995: 242-243). In contrast, the first two phases of the Amboseli CBC program were also implemented during this era (Western, 1994a) and a wildlife extension program (WEX) was implemented in Kajiado (1948-1987) (Berger, 1993). While the two programs overlapped, they were never explicitly linked (Lindsay, 1987: 162-163).

These revolutionary conservation programs and the expanding tourism aside, wildlife remained a low priority of the national government during this era. In spite of the clear economic importance of wildlife viewing, out of 29 ministries the Ministry of Wildlife and Tourism received the fifth smallest budget, well below Livestock and Agriculture. Low investment in this important industry exacerbated the problems with WCMD already listed, meant little public outreach or education occurred, and resulted in unchecked tourism taking its toll on wildlife and the ecology (Berger 1993: 14-16). An explanation for this seemingly incongruous situation comes from Gibson (see literature review). He argues factional politics and the desire to control wildlife played a greater role in wildlife legislation than conservation concerns or sustainability of the tourism industry. In the end, it took conditions deteriorating to a level where this lucrative industry was seriously threatened for Moi to take action (Gibson, 1999: 1-18, 154-160).

The situation for wildlife was grim across Kenya in the 1970s and 1980s. However, poaching and animosity toward wildlife was considerably lower around Amboseli. As discussed in the literature review, Western cites the lower poaching levels and improved attitudes as major successes of the CBC based Amboseli Development Plan. The first two phases of this plan fall within the period being discussed here, as I said. The program was previously discussed in the literature review, but I must necessarily expand on that discussion in order to clarify the conservation history of Kajiado.

The CBC approach to conservation went against the protectionist ethos that still prevailed within the conservation community at this time and was interdisciplinary in nature, combining conservation and development. The Amboseli program sought to

balance conservation costs and benefits at the local level. It also took into account the historical relationship between the Maasai and their environment and with wildlife. A land use study indicating that tourism, not cultivation, was the best alternative to herding in the district was used as well. With these points in mind, the plan tried to address the conflict that shifted Maasai attitudes from benign to hostile where wildlife were concerned, their socioeconomic concerns and distrust of authorities, as well as the distrust of locals by authorities and governmental antipathy toward conservation (Western, 1994a: 18-19, 22-29)

Both Phase 1 (1977-1981) and Phase 2 (1982-1987) of the program saw a lowered incidence of poaching, as stated, and an increase in the total biomass. The second phase increased outreach to the Maasai through self-help conservation programs aimed at helping diversify the local economy. Most of the problems with these two phases came from the national level. Among those problems were: the water pipeline promised to the Maasai to compensate for lost grazing land in the park was built but not maintained and grazing fees paid to the Maasai were discontinued after a few years. Corruption and nepotism at all levels and administrative and communication problems with the WCMD were also factors, as was the lack of broad involvement of the Maasai in planning. These problems and others lead to a breakdown of the initial cooperation between the government and locals (Berger, 1993: 38-41; Western, 1994a: 36-42).

During the second phase of the Amboseli program, the WEX program was introduced into Kajiado in 1984. Its intent was also to link conservation and development by taking into account the needs of all stakeholders (Berger, 1993; pp. 1-14). The goals of the program were to reduce the negative aspects of development and

build new institutions and opportunities for participation in conservation through community empowerment within existing legislation. One assumption of the program was that local contribution depends on participation and that people will contribute if they benefit. Another assumption was that for more equitable, sustainable and workable conservation, and the easing of wildlife conflict, local lead in management was required. To achieve its goals, the program employed an interactive education approach to create a dialogue between WEX personnel and local people to solve problems (Berger, 1993: 47-59).

The program was based in the Loitokitok socio-ecosystem. It considered the economic significance of tourism an important but under developed economic alternative in the district. The problem was that tourism dollars accrued at the national level and locals saw little benefit from wildlife conservation. This situation was unfortunate since land use studies demonstrated that herders and wildlife used land as a single unit while other land uses fragmented the landscape. Clearly, pastoralism was wildlife friendly where agriculture and modern ranching were not. An additional concern was that the GR program was ecologically unsustainable and eroded traditional ties (Berger, 1993: 25-38).

A preliminary survey showed wildlife issues to be the primary local concerns. The issues included: conflict with wildlife, conflict with wildlife authorities, and the lack of benefits from tourism and its negative cultural impact. Secondary concerns were the overuse of resources and ethnic conflict. Using workshops to facilitate dialogue on these concerns, the program helped to develop local solutions. Also, understanding that action must follow discussion, WEX personnel became involved with various projects such as the Rombo Irrigation Project (Berger, 1993: 65-108).

An evaluation of the program revealed that it successfully facilitated participation overall. For instance, safari camps and other community conservation initiatives to bring in tourist dollars were planned and acted on. Also, community/agency communications improved and the workshops helped avoid the Loitokitok GR breakup due to ecological concerns. More importantly, agency diagnosis and action moved to become local diagnosis and action. The main problems encountered were an education gap, conflict between age-set and group members in general, politics, getting full local representation in the workshops especially where women are concerned, and the logistics of reaching outlying areas (Berger 1993: 111-145).

The KWS (1987 to the Present)

Threats to the tourism industry from poaching, attacks on tourists, and the inability of the WCMD to deal with these threats lead to presidential intervention in 1987. As an institution, the WCMD had been disastrous for wildlife, evidenced by its performance in Amboseli and inability to deal with the poaching problem. The agency was a scandal not only nationally but internationally as well. The lack of funding and control over funds, lack of accountability, corruption, and nepotism that weakened this institution were addressed by setting up the KWS, its replacement, to be run by an independent board of trustees with control over its own revenues and expenditures. The plans for this parastatal replacement institution that would emphasize participation began in 1988. In 1989, the formation of the KWS was announced, along with Richard Leakey's appointment as its first director. In 1990, it formally replaced the WCMD. Although initially controversial in its own way, Western argues that the replacement of

the WCMD with the KWS was in large part responsible for the turn around in Amboseli and successes beginning to outweigh failures in Phase 3 of the CBC program (1987-1992). (Western, 1994a: 42-48; Western, 1997: 247-251).

Although he did not have a background in wildlife, Leakey possessed several skills needed for the directorship of the fledgling KWS, including: wide renown, a record of challenging corruption, fund raising skills, and above all presidential support (Western, 1997: 247-251). This support would allow him enormous autonomy, but at the same time cripple him in the political backlash from the way he used that autonomy to bypass the established bureaucracy (Gibson, 1999: 108-110). Another problem was that he brought with him the same preservationist approach and paternalistic attitude toward herders that had plagued conservation plans previously (Western, 1994: 42-48; Western, 1997: 247-251). His approach and attitude were reflected in the early policies of the KWS, which he organized in a paramilitary manner and ran independently of the Kenyan bureaucratic apparatus (Leakey and Morell, 2001: 137).

During his tenure, Leakey concentrated on the parks and did little in the area of human/environment relations. He felt CBC was tantamount to welfare and opposed direct payment of compensation, which, he rightly pointed out, had been abused in the past. Benefits were to be spread in the form of public works and revenue sharing and support for tourism activities, the latter two of which would come sometime in the future. Revenues from the parks, to him, were for wildlife only (Leakey and Morell, 2001: 121-133, 138-141, 287-287). Even the Protected Areas and Wildlife Service (PAWS) community outreach project was initially run in a very top down manner concentrating more on infrastructure for tourism than anything else (Leakey and Morell, 2001: 292-

294). One management plan in particular he advocated, to fence all the parks (Leakey and Morell, 2001: 201-211), was fortunately not implemented and would have been ecologically disastrous if it had been (Western, 1994a: 42-48) and clearly showed his preservationist philosophy.

Leakey's aggressive approach and the international ban on ivory essentially shutdown commercial poaching (Western, 1997: 262-263). There is good evidence, however, that subsistence poaching has continued (Kock, 1995: 262-263). As I said though, the same approach that brought an end to poaching also brought him into conflict with the Kenyan political system he had sidestepped. With the elimination of commercial poaching and corruption achieved, there was a need to move toward CBC, which he resisted (Western, 1997: 262-263). Leakey resigned as KWS Director in 1994 amid pressure to change his approach (Leakey and Morell, 2001: 278-287). He was replaced by Western who began to shift the focus of the agency toward CBC (Western, 1994a: 42-48), which has slowly continued into the present.

Despite the initial biases of the agency, the formation of the KWS was instrumental in reestablishing a dialogue between the government and the Maasai that had broken down at the end of Phase 2, largely due to problems with the WCMD, in the third phase at Amboseli. At the outset though, it took written threats of fencing from the Maasai to force the KWS to keep its promises once that dialogue began, while Leakey was still director. Actually, the actions of Maasai leaders in this matter can be seen as a positive impact of CBC as they applied political pressure instead of spearing wildlife. While compensation still did not match costs, this shift indicates Maasai attitudes appear to have changed toward wildlife at some level. This change can also be seen in the

limited break up of at least one GR because of concern over wildlife dispersal and the formation of a wildlife association and game scout program when KWS progress was deemed by locals as too slow to act. It is also significant that the CBC approach did more to curb poaching in Kajiado than increased enforcement did in the rest of the country and that the integrity of the ecosystem remained intact and wildlife populations stable (Western, 1994a: 42-48).

As with Phases 1 and 2, most of the problems with Phase 3 come from the national level and include all the problems previously listed. Another concern throughout all the phases was that only a limited number of Maasai actually participated in the program (Western, 1994a: 44-50). Even though outreach occurred to a far greater degree than in the Amboseli program (Lindsay, 1987: 161-165) and, therefore, probably impacted a broader range of the society, limited participation was also a problem in the WEX program, which was discussed in the previous era (Berger 1993: 111-121). What this limited representation may mean is that most Maasai still do not feel they are benefiting from conservation, which will be discussed further under Point B where analysis from the 1977 and 1996 survey data will be introduced (Campbell et. al., 1999; Campbell et. al., 2000). If a clear link between benefits and wildlife conservation is yet to be made (Western, 1994a: 44-50) and if participation and contribution are linked to benefits (Berger, 1993: 47-49), then, although the Amboseli and WEX programs made tremendous headway in moving beyond stereotypes and preservationist folly, many challenges to integrated conservation still remain. These challenges come from the opposing interests operating at various scales and effecting wildlife and the everchanging socioeconomic realm in Kajiado, where some benefit from change and most do not.

Historical Trends in Kajiado and the Conceptual Framework

The thread that weaves its way through the entire discussion of the cultural and wildlife history of Kajiado is conflict born of the interaction of opposing forces. It took the form of conflict over resources between herders and farmers, which has an ethnic aspect to it as tribal groups are defined by livelihood to a large degree. It also took the form of conflict between farmers and wildlife, which has likely always occurred but has grown steadily as cultivation has spread to areas never farmed before and to the Maasai who previously did not embrace it. Furthermore, the constriction of herder mobility and competition for resources, beginning in the colonial period, lead to conflict between herders and wildlife, which did not exist previously.

The examination also demonstrated that conflict has occurred between locals who bear the costs of wildlife conservation and policymakers who wrote conservation legislation from preservationist, paternalistic, and agricultural biases that led to land annexations and mutual distrust. In the colonial period, this conflict was mostly between white and African, but in independent Kenya it also takes on an ethnic aspect because of tribal affiliations in the government. And finally, it was demonstrated that conflict has occurred between the international community, the national government, and locals over the control of wildlife.

All these conflicts were tied to the intense demographic and sweeping socioeconomic changes that occurred in the district over the last century and can be seen in the trends that emerge from the historical discussion. These trends are:

- (1) Land use change, especially the spread of agriculture and the concerns about fragmentation that come with it
- (2) Land tenure change, such as the shift from communal to group ownership and the subsequent break up of the GRs that impacts land use change.
- (3) The ethnic mixing that has occurred due to demographic upheaval in the colonial period and the subsequent migrations of farmers into the district.

The historical analysis of Kajiado is summarized and directly related to the sub-points of Point A below:

- Sub-Point 1 deals with determining the relevant time period for study. Clearly from the historical discussion, all the conflict described either began or has become increasingly intense since beginning of the colonial period in the late nineteenth century. Along with the conflict, the impact of the anthropogenic factor on the environment has also increased.
- Sub-Point 2 then examines with the environmental setting and changes to it that may have occurred during the relevant historical period. As discussed, the East African environment has remained essentially stable for the past 2600 years. The changes that have occurred in the historical time period have threatened ecological sustainability through several factors. For example, the spread of agriculture in a semi-arid region with limited arable land and the

impediment of herder and wildlife migratory patterns are associated with environmental degradation.

- Sub-Point 3 analyzes the human history of the study area. In examining Kajiado since the late nineteenth century, the theme of conflict clearly emerges. This theme is reflected in the interactions of opposing interests that has lead to the dramatic socioeconomic and demographic changes seen in the district.
- Sub-Point 4 moves research into the conservation and wildlife history of the study area. Analysis for Kajiado demonstrated that the same forces impacting the sociocultural realm were also impacting the landscape. Likewise, socioeconomic and demographic changes impacted wildlife as well.
- Sub-Point 5 analyzes the interrelationship of Sub-Points 2 through 4 and the trends that emerge. In Kajiado, and I suspect elsewhere as well, the human and wildlife histories were shown to be intertwined and inseparable. It is only for the ease of data assimilation and discussion that these sub-points are divided in the Framework. The historical discussion for Kajiado makes clear that one cannot discuss either half of the human/environment dynamic without discussing the other. With this in mind, it should be clear that the trends of land use change, land tenure change, and ethnic mixing are as much concerns of conservation as they are development.

One final point must be made before moving to the contemporary discussion. Beyond the limitations to my research previously stated, there is one additional

shortcoming with the development of the historical perspective presented here. Virtually the entire human sided of the historical discussion focuses on the Maasai in Kajiado. The problem is that the ethnic make up of the district is no longer homogenous, and, in truth, maybe should not be characterized as such since the end of the colonial period. Since that time the district has seen a 13% growth rate in population, of which only 2.2% was due to natural growth (Berger, 1993: 25-31). As of 1996, the Maasai made up only 60% of the total population in the district (Campbell et. al., 2000: 6-8). A better understanding of the circumstances of other ethnic group whose interests are almost certainly different from the Maasai can only increase our understanding of conflict in the district.

Point B: Contemporary Social Driving Forces

The purpose of a detailed historical analysis is to establish context for the contemporary situation in a study area. Without a historical perspective, one is trying to view a dynamic progression, occurring at different scales through time, in a single snapshot that is likely to provide only misleading idiosyncrasies that are likely to lead to static and preservationist conservation approaches that may temporarily treat symptoms without understanding the disease. Similarly, looking at proximate causes without looking at the drivers of those causes is likely to produce the same results.

Proximate causes were defined in the introductory chapter in anthropogenic terms as the immediate human action taking place that is seen as directly causing environmental change (Stern, et. al. 1992: 67-75). This definition needs some further clarification,

however. Naturally occurring proximate causes of change, such as drought or regeneration processes in savanna ecosystems associated with migratory herbivores, exist as well, and are distinguished by the lack of direct human action (Young and Zimmerer, 1998: 327-340). These non-human related proximate causes are the natural processes at work on the landscape.

Anthropogenic proximate causes are further distinguished from the natural processes by the rate and frequency of disturbance, as well as the kind of disturbance that alters the natural disturbance processes or introduces previously unknown disturbances. Within this distinction, of course, there are different degrees of anthropogenic change. For instance, off-road vehicle use and livestock grazing are classified by Zimmerer and Young as low-to-moderate types of disturbance that occur chronically and have visible impact over years to decades. The spread of agriculture and settlement, on the other hand, are classified as intense disturbances that have profound impact in a relatively short time period (Zimmerer and Young, 1998: 6-19).

Although I distinguish between natural and anthropogenic proximate causes, the two are often intertwined and at times indistinguishable (Zimmerer and Young, 1998: 6-19), as herder and wildlife migration patterns have been historically in East Africa (Western and Gichohi, 1993: 269-281). This example shows that in reality the separation of human and natural causes is artificial, as humans are part of their environment (Zimmerer and Young, 1998: 6-19). While on the one hand, the Maasai influenced the environment historically without compromising its sustainability (low-to-moderate impact), on the other, their activities, as with previous pastoralists in the region, are such that they are part of the natural regimen (Berger, 1993: 23-25). In essence then, the

relationship between human and natural proximate causes of change exists on a continuum from almost fully natural (i.e. wilderness) to almost fully human (i.e. cities) (WinklerPrins, 2002: personal communication).

Nevertheless, the anthropogenic factor has been clearly linked to rapid and negative environmental change that has resulted in plant and wildlife declines in recent history (Zimmerer and Young, 1998: 6-19). The historical discussion clearly demonstrated this was the case for Kajiado. While it is necessary to understand both natural and anthropogenic causes of change and true that the two are not mutually exclusive, it is the degree of impact associated with the latter that requires the distinction and focus on anthropogenic proximate causes (Stern et. al., 1992: 44-75; Zimmerer and Young, 1998: 3-26). The distinction made, I refer to anthropogenic proximate causes as simply proximate causes in the following discussion unless otherwise noted.

The identification of the proximate causes in the present is the point where conservation approaches traditionally begin and end their information gathering. Examples of these approaches, such as site conservation planning (NC) and ecoregion planning (WWF), were presented in the literature review. The MAB guidelines indicate the bioreserve approach would act similarly (Dyer and Holland, 1988: 635-641). The reasons for this present oriented, short-term focus have been discussed throughout this thesis and include the oversimplification of the human dimension, and the prevalence of neo-Malthusian thought among ecologists (see the literature review for a detailed discussion of each of these factors). These approaches are designed to achieve short-run, attainable conservation goals, but they tend to lack a broad historical perspective and therefore understanding of the complexities of the present. Even the most progressive
approach that addresses only proximate causes is likely to result in a crisp but overly simplified conservation program that will attain limited success at best because it does not address the bigger picture.

The immediate and the short-term are important, but they only address a selection of the issues facing a conservation area. The goal of a conservation plan should be to address all the issues involved, to assemble all the pieces of the conservation puzzle. The missing pieces of the contemporary puzzle are found in the historical perspective and the contemporary social driving forces at work in the study area. Social driving forces are defined as the economic, political and institutional, sociocultural, and environmental forces operating at the local, national, and global levels driving the proximate causes observable in a conservation area. In other words, social driving forces are the indirect causes of change (Stern, et. al. 1992: 75-93).

The inclusion of environmental driving forces under the definition of social driving forces requires further explanation. While it may seem that environmental drivers should be treated as a separate category, I argue that the interrelated nature of the cultural and environmental factors in the human/environment dynamic applies to the relationship between the drivers of change as well. I demonstrate in the following discussion of Kajiado that environmental drivers influence economic, political/institutional, and sociocultural driving forces as much as these in turn influence the environment.

Both proximate causes and social driving forces are important for understanding the human/environment dynamic at work in a conservation area but particular attention must be paid to social driving forces. Because they tend to be more subtle and harder to

define, social driving forces are often overlooked or seen as peripheral to the immediate problem being observed. Such oversight could contribute to present based, static conservation approaches. While identifying the proximate causes of change is necessary to accurately assess immediate levels of environmental impact from different types of human activities (Stern et. al., 1992: 92), contextual understanding of the contemporary setting in a study area requires analysis of the social driving forces at work. For these reasons, I emphasized the drivers of change in the Framework and designated Point B, Contemporary Social Driving Forces (table 3).

Point B of the Framework asks the question, Where are we now? As table 1

shows, this point consists of three sub-points. These sub-points are presented in an

Point B: Contemporary Social Driving Forces (Where are we now?)			
Sub-Points			
1. Building on the data collected in the historical analysis, identify the proximate causes of change at work in the conservation area. Pay attention to the scale at which these causes are operating.			
• What metrics are available to measure change? What environmental and human tolerance thresholds are involved?			
• What changes are the result of natural proximate causes (processes)?			
• What changes are the result of anthropogenic proximate causes?			
• What is the degree of severity of the various anthropogenic factors?			
2. With the proximate causes identified, focus on those anthropogenic causes negatively impacting or potentially negatively impacting wildlife. Analyze the economic, political/institutional, sociocultural, and environmental driving forces associated with those proximate causes at the local, national, and global levels.			
• At what scales do the drivers operate?			
• How do they relate to one another?			
• What metrics are available to measure their impact on the conservation area?			
3. Relate the analysis of Sub-Points 1 and 2 to conservation issues, such as wildlife composition and distribution, habitat change and fragmentation, land use changes, and issues of tenure to identify contemporary trends.			
• What are the conservation and development policies/philosophies in effect? Are they coherent and coordinated between protected and non-protected areas in terms of planning? What data is available to measure their impact?			
• Who are the stakeholders involved at the various levels from local to global? What is their relationship to one another? Do all of the stakeholders have a voice in conservation? If not, who decides conservation questions?			
• Who owns wildlife and do those who bear the greatest costs of conservation see equitable compensation for their burden? If not, where do monies accrue?			

Table 3-Point B of the Contextual Framework for Wildlife Conservation.

illustration of the contemporary situation in Kajiado, which will build on the foundation laid in historical discussion. The proximate causes of change at work in the district are identified first. With these immediate causes identified, the drivers of those causes are discussed and contemporary trends impacting conservation identified. Then the contemporary picture of Kajiado is tied back to the specific sub-points of Point B.

As before, some of the guiding questions under the sub-points are more pertinent to Kajiado than others, due to the intended general application of the framework. Also, survey information from the 1977 and 1996 (see methodology chapter) augments the library data to help clarify the contemporary picture. The information presented from this data is synthesized from the analysis presented in, *Land Use Conflict in Kajiado District, Kenya* (Campbell et. al., 2000) and *Interactions Between People and Wildlife in S.E. Kajiado District, Kenya* (Campbell et. al., 1999).

The Proximate Causes of Change in Kajiado

Out of the overarching theme of conflict that emerged from the historical perspective for Kajiado, the most important type of conflict to conservation is human/wildlife conflict. As determined, this conflict largely began with colonial policy that carried over into the independent Kenyan government that disrupted indigenous lifeways and linkages including those with wildlife. That is not to say other types of conflict do not impact wildlife as well. A prime example is the spearing of wildlife in Amboseli after the government announced the area's annexation in 1971 (Western, 1994a; pp. 30-36). On one level, this example shows conflict between local people and

national authorities over the control of resources, but indirectly it is still human/wildlife conflict.

Most likely such linkages could be made between all types of conflict in the district. Additionally, all conflict is related in one way or another to the major trends of land use change, tenure change, and ethnic mixing that also emerged from the historical discussion.

Given these factors, the question becomes what are the proximate causes of the changes reflected in these trends and the theme of human/wildlife conflict and what threat do they pose to sustainability? Although I am emphasizing those proximate causes with negative impacts in this question, I need to make clear that not all agents of change are negative, some are benign or beneficial. The best example of a beneficial proximate cause of change in Kajiado is herding, which studies indicate is integral to savanna ecosystems and has proved sustainable for thousands of years (Collett, 1987: 130-136; Western and Gichohi, 1993: 269-281).

The most obvious answer to the above question about the proximate causes of change at work in the district is agriculture, which fits under the definition of a high impact agent. As established, agriculture is one of the three main land uses in the district, with herding and ecotourism being the other two. In the historical discussion I demonstrated that the spread of agriculture is propelled by tenure changes and ethnic mixing (Kituyi , 1990; pp. 90-98). The threats this spread presents to wildlife and pastoralists were also examined and include: fragmentation, cover change, and land degradation (Kituyi, 1990: 202-208; Kimani and Pickard, 1998: 208-210; Western, 1994a: 28-30). An Additional threat is water pollution due to pesticide and fertilizer

runoff that can harm wildlife, livestock, and humans. Concern over this particular threat is increasing in the district according to the 1996 survey data (Campbell et. al., 1999: 40-44).

An agent of change related to the spread of agriculture is the spread of human settlement. It too fits under the definition of a high impact agent of change. Several researchers have noted that as agriculture and market economies have grown settlement has also expanded (Campbell, 1981a: 39-50; Campbell and Migot-Adholla, 1981: 5-10; Kimani and Pickard, 1998: 205-208). Although I suspect some of the settlement expansion may be tied to the growth of tourism, the literature indicates agriculture is the prime impetus of settlement growth. For that reason, I place this agent under a broad definition of agricultural expansion.

While agriculture appears to be the main high impact proximate cause of change, low-to-moderate causes are at work in Kajiado as well. For instance, along with the concerns over water quality, there is water loss due to a pipeline that diverts up to half the flow of the Nolturesh River to the Nairobi area. This loss of precious water threatens farmers, herders, and wildlife in this semi-arid region where the 1996 survey data indicates that land with access to water has become the primary concern of local people (Campbell et. al, 2000: 6-7).

Another low-to-moderate disturbance factor is ecotourism. It was pointed out in the historical discussion that unchecked tourism has taken its toll on both wildlife and the ecology of Kajiado in the past (Berger, 1993: 14-16; Western, 1997: 169-179). At present, off-road driving in search of wildlife occurs regularly. Such activities can damage the fragile soils and create habitat fragmentation at a variety of spatial scales.

Also, tourists have been known to harass wildlife, which can be detrimental to some already endangered species like the cheetah who require solitude for hunting and reproduction (Olindo, 2000: personal communications; Gichohi, 2000: personal communications; Otte, 1991: 377-383).

Although ecotourism is not considered a consumptive wildlife use like hunting or cropping, the short-term economic concerns of the industry can outweigh long-term wildlife concerns. This dichotomy of interests can make the industry detrimentally impact the very wildlife it depends on for survival (Campa, 1999: personal communications). The examples of off-road driving and wildlife harassment support this assertion. Such contradictory concerns are not tied exclusively to the private sector. Some researchers argue that the relationship between parks and wildlife suffers from the same dichotomy as well. For instance, one of the controversies over parks is whether their role is to be bastions of diversity, playgrounds for tourists, or somewhere inbetween (Hales, 1989: 139-144). Given the fact that it was the loss of revenues not concern for wildlife that drove Moi to form the KWS to address the poaching problem (Gibson, 1999: 1-18, 154-160), I include the parks with the tourism industry under a broad ecotourism land use.

Although other proximate causes of change may exist in Kajiado, these are the main factors that emerge from the literature. Before addressing the driving forces behind these causes, I emphasize that it is with the identification of proximate causes that the information gathering process often ends and goal identification and planning begins (Nature Conservancy, 2000). However, historical discussion made clear the complexities that underlay the spread of agriculture and growth of the ecotourism in the past. The

examination of the social driving forces propelling the proximate causes below makes clear that the historical complexity has not lessened in contemporary Kajiado.

The Social Driving Forces at Work

Galaty argues that land conflict at the local level represents a battlefield for institutional and policy issues of national and international scope (Galaty, 1999; 1-2). Add to this driver, the economic, sociocultural, and environmental drivers involved and the ability to explain change in a conservation area will be vastly improved. With improved understanding, there is the possibility for improved planning. In the following discussion of social driving forces, I will examine the drivers of the proximate causes listed above, concentrating the spread of agriculture because of its severity. I have divided the social driving forces into four categories to simplify discussion and analysis. as I did with the human and wildlife/conservation historical examination. As with the components of the historical analysis, the categories of driving forces should be thought of in terms of an interacting whole. Strict compartmentalization of the elements involved oversimplifies and limits understanding of the contemporary situation, just as it does the human/environment dynamic (Campbell et. al., 2000: 6). Not surprisingly then, there is overlap between the driving forces, just as there is overlap between Points A and B of the Framework.

Economic Drivers

The economic drivers at work in Kajiado allowed large (10 ha or more) and medium scale (2 to 10 ha) agriculture (Kituyi, 1990: 102-107) and wildlife tourism

(Berger, 1993: 25-31) to become the fastest growing most profitable industries in the district, leaving herding far behind. Although other investment options existed and still do (Kituyi, 1990: 76-91), these two industries were and are the most profitable. Increased market access to and demand from the Nairobi and European markets and economic liberalization, are the main economic incentives for the growth of the agriculture industry (Campbell et. al., 2000: 6-7). Also, the softening of traditional prohibitions to cultivation and its growing perception as a viable economic alternative to herding by the Maasai have also aided in its success (Kimani and Pickard, 1998: 208-210). By the same token, international interest in wildlife viewing since the 1930s (Berger, 1993: 8-9) and national interest since independence (Olindo, 2000: personal communication) have driven the growth of ecotourism, as have market changes, expanded air travel, and a tourism friendly infrastructure (Leakey and Morell, 2001: 28-31). Another factor operating locally has been community outreach through the CBC program in Amboseli, the WEX program of the mid-1980s and programs provided by the KWS since 1994 (Berger, 1993; Western, 1994a).

The problem is that the economic interests of these two industries conflict with each other. Whereas ecotourism depends on wildlife, wildlife poses a growing threat to the agricultural industry (Berger, 1993: 31-38). As both have expanded, this conflict has increased, reinforcing the escalating human/wildlife conflict (Campbell et. al., 1999: 5-9). The expansion of agriculture into swamps and riparian zones interferes with the movements and access to resources of both wildlife and herders, which impacts the ecotourism industry (Kimani and Pickard, 1998: 208-210). On the other hand, increased investment in cultivation increases the cost of crop damage by wildlife. Farmers expect

to be compensated for these damages, but as of yet, no compensation is offered to herders or the ecotourism industry for the loss of resources and mobility due to agriculture. Comparisons of the 1977 and 1996 survey data support that this conflict is growing and that most local people interviewed expect it to continue (Campbell et. al., 2000: 5-6).

Another problem that faces the ecotourism industry is that profits still accrue at the national and international level (Berger, 1993: 41-42). Despite continued efforts to spread benefits through encouraging the local tourism industry, such as wildlife viewing on the Oldoniyo, Imbirikani, and Kimana GRs, benefits have had a limited distribution (Berger, 1993: 134-135). Survey results show that only 5% of farmers and 6% of herders in 1977 and 17% of farmers and 8% of herders in 1996 reported receiving wildlife/tourism money (Campbell et. al., 2000: 6-7). If it is true that conservation depends on local contribution and acceptance and that contribution is tied to benefits (Berger, 1993: 47-49), then these percentages could point to a serious problem for the ecotourism industry and likely tend to make the agriculture alternative more appealing.

Finally, the economic viability of both industries depends on land holding size locally, national political conditions, and international market forces. Small holdings (less than 2 ha), especially those that are not adequately watered, are not economically viable for agriculture (Kituyi, 1990: 102-108). Ironically then, the GR sub-division related to agricultural expansion appears detrimental to this land use, given the tendency for the number of holdings to increase and their size to decrease since sub-division began (Kimani and Pickard, 1998: 205-208). On the other hand, research shows small holdings are not economically viable for ecotourism either, although they are for subsistence wildlife utilization (Wambuguh, 1998: 204). Also because of the export orientation of

both industries, the economic condition and tastes of international markets (tied in part to national conditions such as political stability) can impact their economic viability (Campbell et. al., 2000: 6-7).

Political/Institutional Drivers

Political and institutional drivers are very much tied to the economic incentives that have provided for the growth of the agriculture and ecotourism industries. Also, a lack of policy coordination is largely responsible for the competition between the two industries, helping to explain human/wildlife conflict in the district. For example, the agricultural and settlement bias prevalent in Kenyan development policy (Kituyi, 1990: 95-98) and the spread of free market economics, which is tied to international neoliberal politics, is propelling the subdivision of the GRs and has also provided the economic incentives for the growth of the agricultural industry (Galaty, 1999: 1-6; Galaty and Ole Munei, 1999: 68-69). At the same time, the national government with its preservationist bias (often under pressure from the national and international conservation community) is setting policy pertaining to wildlife conservation and access, impacting the ecotourism industry without reconciling the conflicting interests of the agricultural industry.

Based in part on political expedience and corruption (Gibson, 1999: 1-18) and in part on prejudices carried over from the colonial period (Collett, 1987: 144- 146), the preservationist bias of the Kenyan government hinders the development of the ecotourism industry at the local level. The strict control over wildlife by national authorities limits local access to the benefits of this valuable resource despite the efforts of the Amboseli Program, the public outreach and revenue sharing of the KWS (Western,

1994: 44-50) and the WEX program (Berger, 1993), a follow-up to which was never funded. The 1977 and 1996 survey data noted above supports this analysis (Campbell et. al., 2000: 6-9). Nevertheless, with the support and pressure of the national and international conservation community, ecotourism has spread beyond the parks to some degree (Berger, 1993: 154-16).

As indicated from the historical perspective, policy and economic drivers are not the only drivers at work where agricultural spread is concerned. Due largely to a lack of policy direction, the courts (institutional drivers) have become increasingly involved in the sub-division of the GRs since the late 1980s. Interests both inside and outside Maasai society, from local to national and international, are manipulating the judicial system for their own purposes to the detriment of the majority of Maasai. Many of those benefiting from the lack of policy direction, often under questionable circumstances, are non-Maasai farmers, a situation that propels agricultural expansion and ethnic rivalry (Galaty and Ole Munei, 1999: 68). These changes are especially concerning since wildlife and herders use land as a single unit and farmers tend to carve up the landscape, which results in fragmentation that is economically detrimental to herders and ecologically threatening to wildlife (Berger, 1993: 31-38; Kimani and Pickard, 1993: 208-210).

Local level institutions work to mediate both these economic and policy initiatives, especially where market and agriculture policies are concerned (Kituyi, 1990: 73-75, 153-154). However, the outcome of the conflict resulting from the actions of these opposing policy/institutional forces from the local, national, and international levels has changed the structure of Maasai society, which will be discussed below. Given the impact of policy/institutional and economic drivers, coordination and regulation of action

will be required to stem the threats from ever expanding agriculture. Additionally, more inroads will need to be made to spread the benefits of ecotourism more equitably among those who bear the greatest costs of conservation (Campbell et. al., 1999: 29-32, 39-44; Campbell et. al., 2000: 6-8). I will examine possibilities for addressing these problems under Point C.

Sociocultural Drivers

The opposition between national and international policy/institutional factors and economic factors and local institutions has altered the fabric of Maasai society and has resulted in human/wildlife conflict. These alterations listed under Point A include: challenges to the Council of Elders and gerontocracy by the courts and the market system, the shift from communal to group and individual tenure, the rise of women's groups, decline in the institution of moranhood (the first rung of the age-set ladder), and conflict within and between age-sets. The opportunities available for individual gain that came with these political/institutional and economic changes have allowed growing differentiation of wealth, investment and education in Massai society. Primary among those opportunities has been agricultural investment. As discussed, a growing dependence on agricultural products and the easing of traditional taboos on farming have moved many Maasai toward some level of involvement in agriculture (Kituyi, 1990: 90-95, 113-122).

Table 4 shows the results of conflict analysis from the 1977 and 1996 survey data. During the period between these surveys, note that not only increased conflict but new conflict followed the growth of agriculture (Campbell et. al., 1999; pp. 26-27). More

significantly, the table shows that most of the types of herder/wildlife conflict have emerged since the beginning of the GR sub-division and the spread of agriculture among the Maasai. Consider as well that 1977 conflict has increased along side the new forms of conflict that have developed. Finally, the table shows that most respondents still feel they see few benefits from conservation.

NOT SIGNIFICAN	NT IN 1977	eat crops	
EQUAL FREQUENCY 1977-1996: REDUCED FREQUENCY 1977-1996:		=eat crops=	
		italic	
INCREASED FRE	QUENCY 1977-1996:	all other entries	
	HERDERS	FARMERS	WILDLIFE
HERDERS	grazing on crops	Sale of land	Eat crops
	access to grazing	Payment of rent	Predation
	trampling crops	Trampling of crops	Bother people
	one has too many animals	Access to grazing	Spread of disease
	spread of disease	Access to water	Trample crops
	theft of crops	Cattle eat crops	Access to grazing
	grazing on individual land	Access to land	Access to water
	access to water		
	theft of animals		
FARMERS	grazing on crops	Access to water	=Eat crops=
	trampling crops	Cattle eat crops	Trample crops
	one has too many animals	Trampling of crops	Bother people
	theft of animals	=Access to land=	Spread of disease
	theft of crops	Access to grazing	Predation
	grazing on individual land	Payment of rent	Access to grazing
	access to water	Sale of land	Access to water
	access to grazing		
	spread of disease		
вотн			WUF and compensation for damage not great and "creamed" by the chiefs

 Table 4 – Reported Conflict Between Land Users: 1977 and 1996 (in order of frequency of report in 1996) (Reprinted from Campbell et. al., 1999)

The new types of conflicts in table 4 reflect disputes with which the traditional dispute resolution systems are ill-prepared to deal (Kituyi, 1990: 114-122), which Galaty argues has lead to prominence of the court system in deciding matters such as the GR subdivisions (Galaty, 1999: 1-13). Unfortunately, illiteracy and misunderstanding of modern legal systems on the part of the Maasai has lead to the court's manipulation by special interests to the social and economic detriment of the majority of Maasai society (Galaty, 1999: 1-13). Many of these interests come from outside Maasai society to take advantage of the economic opportunities and the haphazard nature of GR subdivision. As of 1996, 7% of the total GR territory was owned by non-Massai (Kimani and Pickard, 1998; 205-208).

These acquisitions since subdivision began in 1984 and non-Massai migrations in general into the district since independence have resulted in two important changes in what is still considered Maasailand. First, Maasailand cannot be thought of as a homogeneous community. Other ethnic groups and rivalry between ethnic groups related to the land and resource competition and ownership must be considered in any conservation or development planning. Second, that the agricultural spread these migrations brought and the subsequent entrenchment of cultivation in Maasai society have played an enormous role in present conservation concerns (Campbell, 1981b: 225-236; Kituyi, 1990: 46-49; Campbell, 1993: 264-265; Campbell et. al., 2000: 8).

Environmental Drivers

As explained, environmental drivers are included under the heading contemporary social driving forces because they not only impact but are impacted by economic,

political/institutional, and sociocultural drivers through complex and sometimes indistinguishable relationships (Campbell et. al., 1999: 34-38). The description of the environmental setting given in the historical discussion describes the study area as mostly bushed grassland in which there are three main permanently watered ecosystems (Croze, 1977: 36-37). In the entire district, only 20% of the land is arable (Von Der Goltz, 1977: 23-33).

Within these environmental constrains humans and wildlife survived for thousands of years. Faunal evidence in the archaeological record indicates that for at least the last 2600 years, until the colonial period, there was extensive species stability. That is, the evidence indicates that herding, the primary land use during this period, had a long record of sustainability and coexistence with wildlife prior to the colonial period (Collett, 1987: 130-136; Western, 1994a: 20-23). Furthermore, the evidence argues that a combined herding/wildlife land use is more beneficial to savanna ecosystems than either alone (Western and Gichohi, 1993: 269-281). Today herding is in increasing competition with ecotourism and agriculture. Farmers have migrated into the district and land has been set aside for wildlife, increasing competition for resources and leading to human/wildlife conflict. This competition combined with the disruptions of traditional herder coping systems such as mobility has also lead to the sustainability of herding coming into question (Kimani and Pickard 1998: 208-210; Campbell et. al., 1999: 13-26; Campbell et. al., 2000: 3-6).

The environmental realities of the district have made competition for resources between land use types increasingly intense. The spread of agriculture has altered and fragmented the landscape (Berger, 1993: 31-38; Kimani and Pickard, 1998: 208-210)

and lead to the loss of wildlife diversity, the decline of woodlands and native plants, soil degradation, and the decline of water quality (Campbell et. al. 1999: 34-38). As stated, ecotourism too has had an impact as well, though not to the degree of agriculture in general (Berger, 1993: 14-16). I use the phrase "agriculture in general" here because I feel at this point it is important to note that not all agricultural activities are incompatible with herding and ecotourism. In some cases, Maasai farmers still allow dry season grazing, which can help maintain the flexibility of both herders and wildlife. Such herder/wildlife compatible cultivation should be encouraged (Campbell, 1981a: 51-58).

Nevertheless, the biophysical realities make widespread agriculture in general unsustainable, particularly in poorly watered areas and when fencing denies access to resources by herders and wildlife. Such factors threaten to alter the ecology of the district through land degradation, threaten the future of wildlife and, as a result, the ecotourism industry (Kituyi, 1990: 102-208; Western, 1994a: 23-28; Kimani and Pickard, 1998: 208-211). While parks offer some sanctuary to wildlife, they are simply not large enough to insure the long-term survival of many species (Western and Wright, 1994: 1-12; Terborgh 1999: 17-22). In fact, according to Western, "Conservation never provides a final solution, only a temporary reprieve for wildlife" (Western, 1997: 158-159).

Aspects of the changes in habitat and wildlife composition in Kajiado in the past twenty years may be being reflected in tables 5 (herders) and 6 (farmers) below, which show the shift in the species involved in human/wildlife conflict between 1977 and 1996. Unfortunately, researchers did not collect information on the genus and species of the animals involved in the conflicts reflected in these tables. In some cases, such as lions and elephants, I could have surmised that information. However, in other cases, such as

antelope, the number of possible species that could be involved prohibits supposition.

Under these circumstances, I did not extrapolate on the survey data. Other information

an an an Araba an Araba an an an Araba an Araba. Ba an anns an Araba anns an an an Araba an Araba	1977	1996		
SPECIES	N = 53 (32%)	N = 97 (75%)		
Buffalo	70	37		
Lion	62	36		
Elephant	43	62		
Antelope*	28	62		
Leopard	26	35		
Wildebeest	9	19		
Zebra	9	24		
Hyena	0	60		
Monkey	0	38		
Baboon	0	33		
Porcupine	0	4		
Wild dog	0	3		
Giraffe	0	3		
*Antelope include smaller antelope such as Grants and Thompson's gazelles, and impala. $df = 12$. X^2 of 96 is significant at the .001 level.				

Table 5—Wildlife Species Involved in Herder-Wildlife Conflict (by percent of those reporting conflict (Reprinted from Campbell et. al. 1999)

	TOTAL		MAASAI		NON-MAASAI	
	1977	1996	1977	1996	1977	1996
WILDLIFE	N = 137	N = 223	N = 53	N = 112	N = 84	N = 100
SPECIES	(61%)	(75%)	(60%)	(80%)	(62%)	(70%)
Buffalo	84	25	83	25	85	24
Antelope	74	77	64	79	80	74
Elephant	57	66	58	64	56	67
Monkey	32	39	23	42	38	38
Wildebeest	20	17	23	18	18	16
Giraffe	19	11	24	14	15	6
Lion	10	8	25	11	0	5
Hyena	6	27	15	42	0	14
Leopard	6	14	13	19	1	10
Zebra	4	33	6	37	2	31
Porcupine	1	27	1	30	1	24
Baboon	0	23	0	24	0	22
Wild Dog	0	13	0	14	0	10
TOTAL 1977-96 df = 12. X^2 of 210 is significant at the .001 level						
MAASAI 1977-96 $df = 12$. X ² of 98 is significant at the .001 level						
NON-MAASAI 1977-96 df = 12. X^2 of 126 is significant at the .001 level						

Table 6—Wildlife Species Involved in Farmer-Wildlife Conflict: 1977 and 1996 (by percent of those reporting) (Reprinted from Campbell et. al. 1999).

not included in the study was the time of year in which the conflict occurred and the location of those conflicts.

Although the 1977/1996 survey data provides a wealth of information for studying human/wildlife conflict, it is unfortunate that this additional data was not included. Species identification would have allowed examination of the habitat requirements, range, and behavior of the different species involved in conflict. This analysis could lead to the identification of indicator species that could aid in explaining the changes shown in the tables. Likewise, information on the time of year that conflicts occurred and geographic information placing incidents in relation to protected areas could add to that explanation (Campa, 2002: personal communication).

Working with the information available, table 5 shows the greatest conflict occurring between herders and buffalo and lion in 1977, but in 1996 conflicts with those species have been virtually halved, while conflict with hyena, monkey, and baboon, nonexistent in 1977, has risen dramatically. Likewise, in table 6 in the columns of combined Maasai and non-Maasai farmers, conflict with buffalo has dropped considerably, while conflict with species like hyena and leopard, and even more significantly smaller animals like porcupine and wild dog have risen dramatically. The rise in conflict with smaller animals is significant for two reasons. First, since they are not "charismatic" species, farmers are not likely to be compensated for the damage they cause (Campbell et. al., 1999: 34-39). Second, as species that may more easily co-exist with humans as the habitat for other species is reduced, conflict with them is likely only to increase (Olindo, 2000: personal communications).

Contemporary Trends in Kajiado and the Conceptual Framework

The historical perspective should flow into the contemporary perspective. Not surprisingly many elements are common to both perspectives in Kajiado including the theme of conflict. Also, the three main trends that emerged from the historical discussion emerge from the contemporary discussion. However, based on the addition of the contemporary analysis these trends require somewhat further assessment. The updated trends are:

(1) Land use change due to the profitability of agriculture and ecotourism and cover change due to agriculture.

(2) Land tenure change and the almost inevitable break up of the GRs.

(3) Continued ethnic mixing and the ensuing rivalry between groups.

The contemporary analysis of Kajiado is summarized and directly related to the subpoints of Point B below:

- Sub-Point 1 asks the researcher to identify the proximate causes of change at work in the conservation area, to separate natural from anthropogenic causes, and rate their degree of impact. To summarize the preceding discussion, the three major land uses in the district, agriculture, ecotourism, and pastoralism were identified as proximate sources of change impacting the environment to some degree.
- Sub-Point 2 then asks the researcher to take those anthropogenic causes of change with negative or potentially negative impacts and examine the social driving forces behind them. For Kajiado, research indicates that agricultural expansion is the primary negative proximate cause of change at work (Kimani

and Pickard, 1998: 208-211) and that ecotourism was involved as a low-tomoderate negative disturbance factor (Berger, 1993: 14-16). Herding was shown to be sustainable and even beneficial historically (Western and Gichohi, 1993: 269-281).

These proximate causes were then related to the economic, policy/institutional drivers that propelled the growth of both agriculture and ecotourism and limited that of herding (Campbell, 1993: 264-269). A lack of policy coordination was shown to be partly responsible for the conflict that has also grown between agriculture and ecotourism. Wildlife is at the center of this conflict as farmers see wildlife as a threat to their livelihood and ecotourism depends on it (Berger, 1993: 31-38; Gibson, 1999: 154-160).

An additional institutional/policy factor involved in the expansion of agriculture is the increasing involvement of the court system in the GR subdivision process. The result of that involvement has been that land is being consolidated into fewer hands and increasingly those of non-Maasai farmers (Kituyi, 1993: 154-156; Kimani and Pickard, 1998: 205-208; Galaty and Ole Munei, 1999: 68). Similarly, the fact that monies from ecotourism tend to accrue at the national and international level is a barrier to expansion of this industry at the local level (Berger, 1993: 41-42), which could increase the agricultural incentive.

The sociocultural drivers involved include national level interests interacting with local institutions to change Maasai society. The primary example of this change is the diversification of agriculture into Maasai society

(Kituyi, 1993: 90-95). Also, the migration of non-Maasai farmers into the district has fed ethnic rivalry (Campbell et. al., 2000: 8).

Environmental drivers combine with the other categories of drivers to bring agricultural sustainability into question. Environmental realities also make clear the very real threat agriculture presents to wildlife, herders, and the ecotourism industry (Kimani and Pickard, 1998: 208-211).

Sub-Point 3 guides researchers to synthesize the information gathered from Sub-Points 1 and 2 and relate it to conservation issues to identify trends. My analysis of the literature and the 1977/1996 survey results indicates that stakeholders from all levels with competing interests are involved in the district. These stakeholders include herders and farmers, both Maasai and non-Maasai tribal people, the KWS, policy makers, national and international interests including conservation NGOs and wildlife.

Furthermore, issues of land tenure and poor policy coordination has colored the interaction between stakeholders and increased conflict. In addition, the fact that ecotourism dollars tend accrue at the national and international level and that local people are not benefiting to a significant degree has increased conflict as well. The result is that those who bear the greatest costs are receiving the least benefits (Berger, 1993; Western, 1994a; Campbell et. al., 1999; Campbell et. al., 2000).

At least part of the reason for this inequity is tied to higher level economic and political biases. To some degree, the historical distrust between the local and national levels is a factor as well (Collett, 1987: 144- 146;

Western, 1994: 44-50; Gibson, 1999: 1-18). If this situation does not change and human/wildlife tensions ease and agriculture expansion continues to be the more appealing option locally, the parks may become the only refuge for wildlife, as inadequate as that refuge may be.

One final issue must be addressed before continuing on to the final point of the Contextual Framework. I argued in the literature review that population has often been noted as a major, if not the only, factor involved with negative environmental change. Even some of the latest research coming out of the natural resources field still reflects this opinion (see Wambuguh, 1998: 30-36). However, population growth played little role in either my historical perspective or contemporary discussion. Where it does, it is seen as a sociocultural driver in terms of migration and ethnic mixing, involved with the spread of agriculture and ethnic rivalry and is put in context with the other drivers at work. To make an argument that human population growth is a proximate or ultimate cause of change in Kajaido not only ignores the complexities involved but also requires an estimation of carrying capacity. The problems with determining carrying capacity for human population were discussed in the literature review and do not need reiteration.

Point C: Future Trends

From the information gathered at Point A and Point B, general social and ecological trends can be identified and recommendations for planning can be made, along with suggestions for resource allocation. It is possible that, as with Kajiado, the trends identified will not fit into distinct ecological and social categories but, rather, will be an intermingling of both. Point C takes the historical perspective and the contemporary analysis and asks the question, where we are going?

The uncertainty of planning into the future, particularly where the human dimension is concerned, has been noted previously and is certainly not being downplayed here. Even with the best information, uncertainty can never be completely alleviated. It is a factor that will have to be accepted with integrated approaches (Campbell, 1998: 281-301). However, in order to plan for the future some general trend extrapolation is necessary (Western, 1989b: 12-25). The contextual emphasis of the Framework is designed to allow researchers to view the human/environment dynamic as a dynamic or continuum, rather than through a single contemporary window.

Although ecosystem management does emphasize context in planning (Meffe and Carroll, 1997: 385-414), the oversimplification of the human dimension that tends to occur limits flexibility (Gibson, 1999: 1-19; see also the missed connections section of the literature review). The addition of an extended historical perspective and analysis of social driving forces incorporated into the Framework helps avoid such oversimplifications of either side of the human/environment dynamic. In doing so, the Framework can potentially alleviate uncertainty to a greater degree than other approaches, making it particularly useful to the mission statement design, goal and objective identification, and adaptive planning aspects of the ecosystem management planning process (Meffe and Carroll, 1997: 385-414).

When identifying the trends that will impact conservation in the future, care should be taken to differentiate them from transitions. Transitions represent a change of

state, as from a colony to an independent state. A trend, on the other hand, represents a general directional movement, such as the shift from communal to group to individual tenure. A transition can become a trend, if say successive administrations replace one another in a chaotic manner, indicating a trend toward instability. Likewise, a transition could be of long duration. For example, although many African countries have been independent for decades, a good argument could be made based on neo-colonialism that many are still in a state of transition from colony to state. So simply relying on duration of time (transitions are short-term and trends are long-term) is not reliable. Nor is the difference purely semantic. Instead, the difference has to do with trajectory, as trends are broad directional changes within the environment or society (Campbell, 2000: personal communication).

The Framework with its contextual emphasis and the identification of trends at each point from past to present to future will help differentiate transitions from trends where static approaches that look at only one point in time cannot. With these factors in mind, table 7 presents Point C of the Framework with its two sub-points and guiding questions.

The discussion that follows will address the sub-points and questions of Point C by continuing the case study from Kajiado. Although I make general recommendations for planning targets and resource allocation, information on specific funding resources was beyond the scope of my research, so that aspect of this Point will not be addressed for Kajaido. The discussion is broken into three parts: analysis of the major trends in Kajiado impacting conservation, recommendations and resource allocations to address

those trends, and a conclusion directly relating the analysis of the study area to the sub-

points.

Point C: Future Trends (Where are we going?)				
Sub-Points				
1. Based on the analysis of Points A and B, identify the main social and ecological trends				
occurring in the conservation area. Be careful to differentiate between transitions and actual trends.				
• Taking into account the historically trend extrapolation can be problematic, what is the likely trajectory of the identified trends?				
• At what scale(s) do these trends operate? Are they likely to negatively impact wildlife? If so, in what way?				
2. Make conservation recommendations for addressing the negative aspects of these trends (for the present and into the future). Identify the financial and human resources available to meet those recommendations. (Avoid becoming too detailed.)				
• What considerations (e.g. agricultural expansion, urban sprawl) emerge from the analysis that will need to be addressed in the planning stage? At what scale do those considerations need to be addressed?				
• What sources of backing, economically and otherwise, are available from international sources, national, local, NGOs, etc.?				
• Given what has and has not worked in the conservation area in the past, what resource allocation suggestions (financial and human) can be made?				

Table 7—Point of the Contextual Framework for Wildlife Conservation.

General Social and Ecological Trends

Returning to the case study from Kajiado, the three main trends that emerged

from the contemporary analysis are:

(1) Land use change due to the profitability of agriculture and ecotourism and

cover change due to agriculture.

- (2) Land tenure change and the probable continued subdivision of the GRs.
- (3) Continued ethnic mixing and rivalry between tribal groups.

Keeping in mind that all of these trends are tied to the overarching theme of conflict, I

add human/wildlife conflict as a fourth trend. The reason for this addition is to set this

form of conflict apart from other forms such as land use conflict in order to focus

analysis. As I said before though, while this may be the main form of conflict where

conservation is concerned, it is related to and impacted by many of the other forms of conflict in the district. Therefore, the general theme of conflict should be kept in mind.

Similarly, as argued under Point B, all of these trends are related, have ecological as well as social aspects and implications, and cannot be looked at in isolation. The discussion of the relationship of these trends to agricultural expansion as the main proximate cause of change and the social driving forces propelling it make this clear. Also, the continuity of trends from the historical to the contemporary to the future trend analysis should not be surprising considering everything builds on what has come before and the dynamic and contextual emphasis of the Framework.

Since the various aspects of these trends have been discussed under the previous points, I will only highlight certain points here and concentrate on their implications for conservation. Prior to the colonial period, the major land use in the district was herding and the sustainability of that land use is basically agreed upon (see Berger, 1993; Campbell, 1993; Western, 1994a; Kimani and Pickard, 1998;). Over the past century though, two other competing forms of land use, agriculture and ecotourism, have emerged in the district, economically eclipsed herding, and bringing overall sustainability in the district into question (Campbell, 1993: 264-271; Kimani and Pickard, 1998: 208-210). Given the discussion of driving forces under Point B, there is every reason to believe that conflict between land use types and between humans and wildlife will continue (Campbell et. al., 2000: 3-6).

It should be clear from the historical and contemporary discussions that with land use change has come changes in land tenure. The relationship between these two trends is complex, and each in turn drives the other. Both policy and the lack of policy have

played a role in these changes, as have local factors (Campbell et. al., 2000: 6-9). As previously discussed, prior to the colonial period, land tenure among the Maasai was communal and cattle were the source of wealth. Through a series of changes including among other factors the introduction of individual tenure with the Swynnerton Plan and group tenure through the GR program, traditional tenure and the role of land itself have changed (Kituyi, 1990: 67-70, 95-98, 161-187; Campbell, 1993: 259-269). The GR program showed the agricultural and settlement bias of policy makers but was also designed to serve an environmental purpose in making sure landholdings were of ecologically viable size. For reasons, including the differing objectives of the government and the Maasai, this program was a failure and almost immediately calls for subdivision began. The result has been that the very ecologically nonviable small holdings the program was to prevent are increasingly appearing (Kimani and Pickard, 1998: 205-208).

Lack of policy direction is largely to blame for the chaos of subdivision as the courts increasingly decide land allotments. Tribal interests have become involved in these litigations, amid allegations of corruption and judicial manipulations, which has added ethnic tensions to the subdivision process. Unless a more equitable process emerges, ethnic tensions are liable to rise as more non-Maasai move into the district under the questionable status quo (Galaty, 1999: 1-6; Galaty and Ole Munei, 1999: 68-70). Agriculture too has spread under the current process, as farmers move into the district the district and the Maasai adopt cultivation. Where it has spread, fragmentation and alteration of the landscape has occurred. Research shows that as agriculture spreads this fragmentation will continue, with fencing becoming more and more prevalent (Kimani

and Pickard, 1998: 208-211). Agricultural expansion and the resulting fragmentation of the landscape threaten both wildlife (and thereby ecotourism) and herders alike who use the landscape as a single unit (Berger, 1993: 31-38). The competition for resources drives conflict including human wildlife/conflict (Campbell et. al., 2000: 3-11). Finally, the environmental realities of this region could spell ecological disaster, including wildlife extinctions, if present trends continue (Western, 1989a: xi-xv).

Given the historical perspective, the present trends could lead in one of two directions. First, the tendency for allotments from the GR subdivision to increase in number and decrease in size could continue. If this occurs, all the evidence indicates that agriculture will continue to spread, which means continued fragmentation and increased chance of severe land degradation (Campbell, 1993: 266-271; Kimani and Pickard, 1998: 208-210), such as desertification (United Nations Convention to Combat Desertification, 1994). Equally concerning is the likelihood that the estimated 65 to 80% of wildlife that exist outside the parks will be severely diminished and some species will disappear. For those in the parks, being cut off from dispersal areas by the fragmentation process will threaten the genetic viability of many species and degrade the environment (Kimani and Pickard, 1998: 208-210). It cannot be emphasized enough that the parks are simply not big enough for many species and that such conservation represents merely a temporary reprieve for wildlife (Western and Wright, 1994: 1-12; Western, 1997: 155; Terborgh 1999: 17-22).

The other tendency is for the small nonviable holdings to be bought up by larger concerns. The result has been that land is being consolidated into fewer hands and landlessness has increased (Campbell, 1993: 266-271; Kituyi, 1990: 154-156). This

outcome could become an increasing source of conflict as more land is consolidated into non-Maasai hands (Kimani and Pickard, 1998: 205-208) and, with the questionable activities of the legal system in these consolidations, ethnic tensions could erupt (Galaty, 1999: 1-6; Galaty and Ole Munei, 1999: 68-70). Based on historical precedent, ethnic conflict could spill over on wildlife and disaffected Maasai could return to aiding poachers (Berger, 1993: 11-16). Though the numbers of small holdings would be reduced, agriculture and fragmentation are likely to continue to expand given that most migrants are agriculturalists and the continued entrenchment of cultivation in Maasai society (Kimani and Pickard, 1998: 208-210; Galaty and Ole Munei, 1999: 68-70). On the other hand, with fewer stakeholders, coordinated land use planning might be easier, which would benefit wildlife and ecotourism (Campa, 2000: personal communication; Campbell, 2000: personal communication).

Recommendations and Resource Allocation

Either scenario above is possible and has historical precedent (Campbell, 1993: 266-271). Flexible planning requires preparing for either situation, as well as watching for unforeseen developments. Land use studies indicate a mix of wildlife and herding is the best land use for Kajiado (Berger, 1993: 23-25; Western and Gichohi, 1993; Western, 1994a: 28-36). Research also shows that agriculture, although profitable, is ecologically inappropriate for most of the district (Collett, 1987: 136-146; Kituyi, 1990: 102-108; Campbell et. al., 2000: 3-11). Given the threat to wildlife and pastoralism from agricultural expansion, it has been suggested that the GR system should be maintained, its management improved, and measures taken to secure land against alienation by non-

Maasai. This suggestion is based on research showing that the type of land use should match the type of land holding. For wildlife and herders, the communal or at least the de facto communal grazing occurring now benefits both, where fragmentation due to agricultural expansion does not (Kimani and Pickard, 1998: 208-211; Galaty and Ole Munei, 1999: 68-70). On the other hand, as I noted earlier compatible cultivation does occur in the district. Since it is unlikely that agriculture will halt altogether in Kajiado, this practice, in which farmers allow herders to graze in the dry season would help to keep ecosystems open and should be encouraged (Campbell, 1981a: 42-59; Kimani and Pickard, 1998: 208-211).

In any case addressing or altering present trends will require action and changes at several different scales. Clearly policy and economic change and coordination is called for at the national level (Campbell, 1981a: 58-59). However, the case studies presented in *Reasons for Hope* (Krishna et. al., 1997) and *Reasons for Success* (Uphoff et. al., 1998) of "successful" community based initiatives for change show that successful approaches often come from outside the community and the state bureaucracy and, if properly handled, become self perpetuating. These cases usually use an approach combining top down and bottom up implementation methods to achieve goals (Uphoff et. al., 1998; pp. 1-10). Such approaches have worked in Kajiado in the past.

The successes of the WEX program in Kajiado in the 1980s provide an example of the effective use of this sort of approach. Working directly with locals numerous conservation initiatives were established and their influence was felt at higher levels. The program assumed equitable, sustainable, and workable conservation and development requires a strong local role in wildlife management. Both the literature review and the

discussion in this chapter support this statement. The WEX program found that local people in Kajiado consider education to flow both ways and soon agency diagnosis and action were replaced by local initiative. It was also found, though, that local ecotourism enterprises often required external support (Berger, 1993: 47-49, 111- 145). Supporting enterprises like the Kimana Wildlife Sanctuary is important to developing ecotourism at the local level. The significance of such enterprises is likely reflected by the fact that Kimana GR members had the most positive response toward wildlife of any GRs surveyed in 1996 and had the highest number of respondents claiming benefit from tourism (Campbell et. al., 1999: 22-23).

The CBC program at Amboseli also achieved inroads where local initiative was concerned and even impacted national level policy (Western, 1994a: 44-50). Along with positive environmental results such as migratory routes staying open, the influence of both programs helped mitigate the GR subdivision on at least two ranches (Berger 1993: 111-145; Western, 1994a: 42-48). Given the historical evidence, a CBC approach combined with a wildlife extension program based on the examples above could prove quite effective and accomplish more than either did alone (Lindsay, 1987: 161-165). One problem that plagued both programs and was reflected in the survey data, though, is that most local people were not participating (Berger, 1993: 111-121; Western, 1994a: 44-50). Easing human/wildlife conflict will require addressing this inequity.

Before addressing this problem though, I wish to revisit the issue of the relationship between wildlife and ecotourism. For reasons already discussed, I have argued the tourist industry and the park/reserve system tend to focus on the economic aspects of wildlife, and I have, therefore, grouped both under the ecotourism land use.

Under the policy of wildlife paying its way, the costs of conservation are largely paid for by tourism (Leakey and Morrel 2001: 278-287). The problem is that tourism is vulnerable to international economics. A prime example of this vulnerability comes from the oil crisis of the 1970s. When the tourist market did not grow as expected the government was financially unable keep its promises to locals, which helped to delay the positive impacts of the program (Western, 1994a: 36-39). Perhaps the terrorist attacks on the United States and the subsequent war in Afghanistan in 2001 will have a similar impact on the tourist industry worldwide.

The point is that neglecting to plan for such downturns in the ecotourism industry could lead to wildlife failing to pay its way. To mitigate this vulnerability and counter the underlying economic focus of ecotourism, Campa suggests introducing a strictly wildlife land use into the district. Whereas parks and reserves serve a dual purpose, in terms of tourism and conservation, and tourism is largely economically motivated, this new land use would be strictly for the benefit of wildlife, on whose viability the ecotourism industry depends (Campa, 2000: personal communications).

However, given the intense land use competition in the district, the question is how to implement such a program let alone pay for it? The answer to this question may come from two recent articles, *The Cost-Effectiveness of Conservation Payments* (Ferraro and Weaver, 2001) and *Global Habitat Protection: Limitation of Development Interventions and a Role for Conservation Performance Payments* (Ferraro, 2001). These papers argue that the direct payment to landowners for wildlife conservation is more cost-effective and streamlined than the more common indirect support of ecofriendly enterprises. It results in a clear-cut connection between conservation and benefit (Ferraro, 2001: 2-3, 7-8; Ferraro and Weaver, 2001: 1-3, 7-17), as opposed to the indirect linkage that has been common with revenue sharing in Kenya (Western, 1994a: 44-48).

Cost/benefit analysis for the district going back to the 1970s supports this approach (Thresher, 1976). While Kenya has developed the Wildlife for Development Fund (WDF) to compensate for wildlife damages and the KWS has a revenue sharing plan (Koch, 1995: 242-243), the results of the 1977-1996 survey data indicate benefits have not reached the majority of local residents (Campbell et. al., 2000: 6-7). In 1994, Western wrote that some of the GRs were considering disbursing tourist dollars to their members (Western, 1994a: 48-50), but I could find no data that indicate this is actually taking place.

In any case, the method of direct payment discussed in these papers is different from any of the present or previous methods of benefit sharing used in Kenya. Based on successful examples from both Western and non-Western countries, this method creates contractual agreements with landowners who conserve habitat for pay. It is not a disbursement. If the contract is not met, the landowner is not paid. Under such a program using a cost/benefit analysis, those bearing greater cost, such as those in dispersal areas near parks or reserves or having more land, would be paid commensurately (Ferraro, 2001: 2-3, 7-8; Ferraro and Weaver, 2001: 1-3, 7-17). Many aspects of this method are in line with those advocated during the planning for the Amboseli program (Thresher, 1977: 38-43).

Returning to the need to expand benefits among local people, a direct payment approach could not only pay for the wildlife land use, supporting conservation during economic downturns, but also return more benefits to local people as a payment for a

vital service. This payment would make them partners in conservation, make the cost to benefit ratio more equitable, and, in turn, could ease human/wildlife conflict. Returning to the two possible outcomes of the trend analysis, under the first scenario of extreme fragmentation, a program combining CBC/wildlife extension with direct payment could help keep wildlife dispersal areas open, given Berger's argument for the connection between conservation and benefits (Berger, 1993; pp. 47-49). Likewise, based on the impact of the WEX and Amboseli programs on local initiative, under the second scenario of land consolidation, this approach combining extension with direct payment could allow small landholders to retain their land, see wildlife benefits, and lessen the problem of landlessness. Because of expanded benefits, such a program could make ecotourism more attractive to locals and perhaps slow agricultural expansion and its negative social and ecological impacts.

There are certain concerns with the direct payment approach, however. First, such a program could be difficult to implement under a group tenure system. Mechanisms would need to be in place to insure everyone entitled to payment receives it. If the payment process is not clear and enforceable, this approach could actually accelerate subdivision, as individuals compete for payments. Second, the problems with the court's involvement with subdivision describe above and land consolidation by outside interests will need to be overcome for the same reason. Third, given the history of previous programs, political opposition can be expected. Finally, there is the issue of where the money for such a program would be found.

As I said, unfortunately, the identification of funding resources is beyond the scope of my research. However, if the industrialized world feels conservation is

important, it should be willing to pay its share in the cost of conservation, and that share goes beyond the tourist dollars it brings in. Given the examples from sites, such as Costa Rico, where direct payment programs have been implemented, NGOs needing to show short-term results to donors could do so, without losing sight of long-term goals (Ferraro and Weaver, 2001: 1-3, 7-17). If these concerns could be overcome, a combination of CBC/wildlife extension to support local ecotourism enterprises (based on the examples presented in this chapter), the introduction of a wildlife land use, and a direct payment for conservation plan could address the negative aspects of the trends discussed at the beginning of this chapter and ease human wildlife conflict.

I must state here again that the Framework is not designed to immediately result in a conservation plan. It is a framework and database to aid understanding so that a dynamic conservation plan may be constructed. The recommendations presented here are based on an almost exclusively literary analysis of Kajiado and are simply that, recommendations. Once the initial data is assembled, as it is here for Kajiado, the next recommended step should be to approach the stakeholders involved, particularly the local stakeholders. Using a workshop method similar to that used during the WEX program (Berger, 1993) or by Campbell (1987) will allow a researcher to hone the Framework and correct any misconceptions. Involving locals in each step of the process after the initial information gathering, from planning to implementation has been shown to be very effective in garnering the local support necessary for successful conservation (see Campbell, 1987; Berger, 1993; Krishna et. al., 1997; Uphoff et. al., 1998).

Future Trends in Kajiado and the Conceptual Framework

Three main trends were identified in Kajiado from the historical analysis, land use change, tenure change, and ethnic mixing. An overarching theme of conflict was also identified. This analysis was carried into the contemporary analysis, where the trends and theme of conflict were refined to reflect the additional information presented there. Human/wildlife conflict was segregated from the overall theme of conflict in Point C and included as a fourth trend in order to focus analysis. Two possible future scenarios for Kajiado emerged from this analysis, fragmentation (many landholders) or consolidation (few landholders) of the landscape (see Sub-Point 1 below).

Several recommendations were offered to address the problems of agricultural expansion and GR subdivision, the underlying economic focus of ecotourism, and the 1977/1996 survey results indicating wildlife benefits still accrue at the national and international level (see Sub-Point 2 below). The combination of these recommendations, it was argued, could address either scenario from the trend analysis, the threat from agricultural expansion, and ease human/wildlife conflict. Possible problems with the suggested recommendations include the same political problems experienced by programs in the past and concerns about implementing a direct payment plan in an area where tenure is not firmly established. It was also suggested, based on successes in other study areas, that a combination top down/bottom up approach to planning using the information garnered from the Framework analysis might be most effective in Kajiado (Berger, 1993; Western, 1994a; Krishna et. al., 1997; Uphoff et. al., 1998).

The following relates the trend analysis for Kajiado back to the sub-points under Point C:
- Sub-Point 1 asks the researcher to identify the major trends at work in a study area and their likely consequences for conservation. The examination of the social and ecological elements of the four trends identified indicated that agricultural expansion represents the primary social and environmental threat. Its continued expansion combined with GR subdivision is likely to lead to one of two possible outcomes, both with historical precedent. The first outcome presented the problems of fragmentation and degradation associated with the tendency toward more and smaller landholdings and limited land use planning. The second presented the parallel tendency toward land consolidation into fewer and often non-Maasai hands and the social unrest that might result (Campbell, 1993: 264-271).
- Sub-Point 2 then guides the researcher to take this trend analysis and make recommendations for planning and resource allocation. It also guides research toward identifying funding resources, which I did not do for the reasons previously stated.

First, it was noted that national economic and policy coordination is called for (Campbell, 1981a: 58-59), but suggested, based on precedent, that the initiative for change could come from outside the political system and at the local level (Krishna et. al., 1997; Uphoff et. al., 1998).

Second, a CBC/wildlife extension program based on the successes of previous programs in Kajiado was recommended to increase local outreach, encourage local participation and input, and support local ecotourism enterprises (Berger, 1993; Western, 1994a). Third, the introduction of a wildlife land use, which does not rely on the tourist market, was recommended (Campa, 2000: personal communications). This new land use could be paid for and benefits spread to local people through a direct payment program, in which contracts are made with landowners to conserve habitat (Ferraro, 2001; Ferraro and Weaver, 2001).

Review of the Contextual Framework for Wildlife Conservation

In the introductory chapter lists of the greatest threats facing wildlife from three prominent ecologists were presented. Terborgh's list consisted of "over population, inequities of power and wealth, exhaustion of natural resources, corruption, lawlessness, poverty, and social unrest" (Terborgh 1999: 17). Western listed the "Evil Quartet" of land use practices (habitat fragmentation, the over-utilization of resources, ecological disruption, and the introduction of exotic species) as the greatest threats (Western, 1989: 32). Salafsky list two factors, "the deep underlying threat of ecological collapse latent in the ticking time bombs of human population growth and expanding consumerism" (Salafsky, 1994: 448-449).

Notice that these lists consist of what are essentially proximate causes of change and that population is the only factor mentioned more than once. Given the extensive examination of the problems associated with the neo-Malthusian perspective and human societies in the literature review, it seems unnecessary to comment further on the prominence this factor, except to state that my analysis indicates it is but one factor

among many. However, the emphasis on the population factor combined with the proximate nature of the most of the factors on these lists can oversimplify the human dimension, as demonstrated throughout this thesis.

Focusing on proximate causes without understanding the drivers of those causes is analogous to treating the symptoms of a disease without understanding the origin of the disease itself. Where conservation is concerned, diagnosis of the disease requires looking at the issues involved in context. It requires accepting that both human societies and the environment are dynamic and related and treating them as such. Treating a disease that threatens native wildlife communities and not just the symptoms of it requires taking an historical perspective and analyzing the contemporary social driving forces underlying the outwardly visible proximate causes of change. My research suggests that ignoring or simplifying these two factors represents at least as great a threat to the future of wildlife as any factor listed above. Western stated that conservation is only a temporary reprieve for wildlife (Western, 1997: 157). Perhaps the oversimplification of the circumstances of a conservation area that can result from not fully taking these factors into account in planning is part of the reason for this situation.

The Framework incorporates an historical perspective and an analysis of the drivers of change to aid in providing a contextual view of a conservation area and in evaluating trends. Because it encourages looking forward as well as backward, the Framework can potentially enable planners to take a more active role in the fate of a conservation area, instead of simply focusing on the present and reacting to events. Instead of viewing a study area almost exclusively through the window of the present, focusing on the visible proximate causes, it encourages one to look at the

human/environment dynamic as a dynamic and take a broader perspective of the all the complexities involved.

Figure 4 shows relationship between the three main points of the Framework and one possible application to management planning. It is a combination top down/bottom up approach and is offered as an alternative to the more top down approaches to ecosystem management (Meffe and Carroll, 1997: 385-415) that one could argue still prevail even with a CBC approach (Western and Pearl, 1989; Western and Wright, 1994). Such an argument depends, of course, on how participation is defined (Little, 1994: 347-370). Nevertheless, most researchers are likely to agree effective bottom up input in planning is far from a mainstream approach. As stated, the Framework will not offer a specific conservation plan, but, as a framework for understanding and a database, its use may point to holes in your data and offer resource allocation and planning suggestions. Nor will the Framework explain how to implement a plan once it is designed, although clues to answering this question are likely to appear

Evidence from Kajiado and the case studies of successful community-based initiatives presented in *Reasons for Hope* (Krishna et. al., 1997) and *Reasons for Success* (Uphoff et. al., 1998), stakeholder involvement in every step of the process, especially at the local level, can increase the chances of success. This recommendation is reflected in the diagram above, which shows The Historical Perspective (A) and its examination and trend identification flowing into the Contemporary Social Driving Forces (B). At Point B the proximate causes of change and the drivers of those causes are identified and trends flowing from past to present are further explored. Finally, the understanding gained at





Points A and B flow into the Future Trends (C), where the likely trajectory of the identified trends is examined and conservation recommendations are made.

Once the information has been initially assembled within the Framework, the diagram shows that stakeholder input could be used to refine the analysis. To be clear, while all stakeholders are important, local stakeholders are being emphasized for reasons discussed through out this thesis. This refinement could be achieved, particularly at the local level, using the workshop method that has been effective in the district in the past (Campbell, 1987; Berger, 1993; Campbell et. al., 2000). After the refining phase, the diagram shows that local involvement should continue into planning. Such involvement can help maintain flexibility, as locals may tune into changes that need to be taken into account before those outside the community are aware of them. Furthermore, indigenous knowledge can bring solutions not previously envisioned (Berger, 1993: 111-145).

Chapter 5

SUMMARY AND CONCLUSIONS

This we know: the earth does not belong to man: man belongs to the earth...All things are connected like the blood which unites one family... Whatever befalls the earth, befalls the sons of the earth. Man did not weave the web of life: he is merely a strand in it. Whatever he does to the web, he does to himself.

-Chief Seattle

Thesis Review

The research question examined in this thesis was: what information is required for improved integrated conservation that incorporates historical circumstances, social driving forces, a dynamic view of ecosystems, and looks beyond the contemporary? To address this question my objective was to design a framework to aid in understanding the specific circumstances of a conservation area. To meet this objective I developed the Contextual Framework for Wildlife Conservation. As the name suggests, the Framework emphasizes context and is a research guide and tool for assembling data on a specific study area. It incorporates the sensitivity to scale (temporal and spatial) and emphasis on driving forces found in political ecology (Peet and Watts, 1996) with the dynamic view of ecosystems found in Conservation Biology (Meffe and Carroll, 1997: 1-39). The follow chapter review summarizes how I addressed my research question and objective.

The introductory chapter established the relevance of conservation concerns in the contemporary world and presented lists of the greatest threats facing the future of wildlife. These lists, taken from the writings of leading ecologists, were composed

exclusively of human-related factors. From these lists it was argued that an interdisciplinary approach is required to secure the future of wildlife. It was noted that some biological and social sciences have recognized the connection between conservation and development and that numerous integrated projects have been and are in place. Despite the progress made in interdisciplinary cooperation, these projects tended to achieve only limited success and were often plagued by many of the same problems. I stated the main reason for these reoccurring problems was that the discourse between the biological and social sciences is still immature. Two main obstacles to this maturation are: (1) the static view of human societies prevalent in the ecological literature and the related influence of neo-Malthusian thought and (2) the static view of the environment held by many social scientists and their historical lack of interest in wildlife studies (Campbell, 1998: 292-296; Zimmerer and Young, 1998: 2-5; Gibson, 1999: 1-18).

The Framework was then briefly introduced as an approach to addressing the conservation concerns listed and to help refine the discourse between the social and biological sciences. The study area I used to illustrate the Framework, Kajiado District, Kenya, was also introduced. My theoretical perspective, which came from the framework for understanding provided by political ecology and the evolutionary view of ecology, as understood in Conservation Biology, was also discussed.

Chapter 2 presented the literature review and built on the foundation laid in chapter 1. It was divided into four sections. The first examined the pertinent ecological literature. The growing understanding among ecologists of the need to incorporate the human dimension into conservation planning was emphasized. On the other hand, examples of where ecologists oversimplified the human dimension were also presented,

as was the prominence of neo-Malthusian thought. The second section presented the relevant sociocultural literature, emphasizing that human/wildlife studies are beginning to be considered a legitimate area of research for social scientists. The usefulness of political ecology as a tool for such study and an overall understanding of the human/environment dynamic was also emphasized. Two criticisms of political ecology were also examined: (1) the lack of scientific rigor and (2) the lack of scientific ecology. The conclusion was that political ecology could benefit from greater ecological understanding.

The third section of the literature review examined the problems with applying neo-Malthusian scenarios to human societies. In specific, it examined the impracticality of applying simplistic ecoscarcity models that rely on the concept of carrying capacity to complex human societies. An historical perspective is taken and literature is presented from both sides of the Malthusian debate. The conclusion was that, while neo-Malthusian theory is useful in studying wildlife populations, it offers little insight into the human dimension. It results in the oversimplification of the variables involved and inhibits the expansion of the interdisciplinary discourse vital to conservation. The final section of the chapter formally presents my research question and objective.

The methodology chapter, chapter 3, followed the literature review and described the development of my research question, objective, and the Framework. A description of Kajiado, the study area used to illustrate the Framework, was given as well. My data sources and analytical procedure was also presented. The bulk of my data came from reviewing from the social and ecological literature available from library, internet,

governmental, and NGO sources. Additional sources included informal discussions with Kenyan conservationists, and previously collected survey data from Kajiado.

The discussion chapter formally presented the Framework in detail. The three main points of the Framework, the Historical Perspective (Point A), the Contemporary Social Driving Forces (Point B), and the Future Trends (Point C), were discussed with their accompanying sub-points and questions. An analysis of Kajiado is used to illustrate each of the three main points in turn. Throughout chapter 4, the importance of the flow from one point of the Framework to the next for contextual understanding is stressed. This flow is illustrated by synthesizing different perspectives to develop an historical analysis of Kajiado and carrying the trends that emerged from that analysis into an analysis of the contemporary driving forces inciting the proximate causes of change visible in the district. The analysis from these two points is then used to analyze the possible trajectory of contemporary trends into the future. The role of the Framework as a tool for understanding and aid to planning is underlined. It is emphasized that the Framework is not designed to immediately result in a conservation plan. A suggestion for a top down/bottom up approach is presented as one way the Framework can be used to aid in planning.

The strengths and weaknesses of the Framework and the need for further research are discussed in the following section. Subsequent to this examination, I return to issues concerning the integration of conservation and development focusing on the development side of the equation. This final section emphasizes the importance of political ecology with the addition of scientific ecology as a tool for understanding the human/environment dynamic and increased interdisciplinary cooperation.

Contextual Framework: Strengths and Weaknesses

One of the most challenging aspects of conservation planning is that each study area is unique. Unless the contemporary circumstances are viewed in context, aspects of these circumstances are likely to be overlooked or misunderstood. The Framework is designed to provide a systematic way of gathering the information needed in each case so that this context can be better understood. It is designed to provide the background analysis needed for enlightened conservation approaches such as ecosystem management (Meffe and Carroll, 1997: 385-415). Context is essential to such approaches (Meffe and Carroll, 1997: 347-382, 419-476) and the multi-perspective historical analysis, examination of the social driving forces at work, and trend analysis for planning into the future incorporated into the Framework can help illuminate this context.

Although the particulars of each study area will vary, there will always be historical circumstances that influence the contemporary situation, in which driving forces are operating at various spatial and temporal scales. The specifics of the study area that these circumstances and forces create will be identifiable in trends that can be analyzed. The potential for the Framework to sort out the particulars of any given conservation area is its greatest strength.

Also, because of its general design and case specific emphasis, information gathered using the Framework could be used to compare conservation areas with similar circumstances. From this comparison it may be possible to make generalized statements about the human/environment dynamic to an intermediate level (Zimmerer and Young, 1998: 1-26). Moreover, the parallels noted by such comparisons could then be used to

streamline the information gathering process, which would in turn help facilitate planning.

Additionally, the Framework is designed to offer a "long-term" approach to conservation. I use the term "long-term" grudgingly, as it is so subjective. What constitutes long-term within a study area depends on the needs of that study area and can also vary with aspects of those needs. Also, trends can change and today's contemporary situation can soon become tomorrow's historical perspective. Therefore, long-term when applied to the Framework means that, if the prescription for consistent updating is adhered to, it could be used to monitor the changes in a study area and help maintain the flexibility of whatever conservation plan is in place.

The main problem with the Framework, of course, is that it is completely untested. At this point it is purely an intellectual construct based largely on a literature review, with the addition of a few other sources. To be anything more than "armchair conservation," it needs to be tested in the field. A study area, such as Kajiado, will have to be selected and data beyond a review literature review will need to be gathered using the Framework. Once the information gathering process is complete, the usefulness of the Framework as an aid to constructing a new conservation plan or updating a plan already in place can be evaluated. Such a pilot study would require extensive interdisciplinary cooperation. When I speak of such cooperation, I do not mean a person or group from one discipline incorporating some useful ideas from another discipline. On the contrary, I mean direct cooperation and collaboration between experts from different disciplines to address a common problem.

Another potential problem is the design of the Framework itself. I took great care in developing the three main points, sub-points, and questions of the Framework to draw attention to important issues that may be going on in a conservation area, without forcing research in a specific direction. Unfortunately, the distinction between guiding and coercing can be fine and may become blurred. No human endeavor is valueless, not even science. No matter how objectively I worded all the components of the Framework, aspects of my own background and biases undoubtedly influenced its design. I do not exist out of context either. As those biases emerge, adjustments may need to be made to the components of the Framework.

Conclusions: Conservation and Development

In my thesis I have argued that there is a connection between conservation and development and used the complex human/environment dynamic as the basis for that argument. Because the focus of my work has been on wildlife and what the social sciences can bring to its conservation, I have stressed the conservation side of the connection, while development has been subsumed in the discussions of political ecology. Although, I have briefly examined other aspects of development when discussing the agricultural and settlement bias and the market orientation of Kenyan development plans, which, along with international forces presented in the discussion chapter, act as political/institutional drivers and are related to economic drivers of change. To complete the examination of conservation and development, I must expand my discussion of international development policy

The development literature is filled with writings that examine mainstream and alternative development approaches, such as neoliberalism and political ecology respectively, from various viewpoints. Good sources of information on the history of development include: Peet and Watts (1996), Friedmann (1992), Smith (1979), Friedmann and Weaver (1979), Scoones and Thompson (1994), Mabogunje (1981), Gore (1984), Friedmann and Rangan (1993), and McNeely and Pitt (1985). Another important source that summarizes and builds on the work of many of these sources is Brohman's, *Popular Development: Rethinking the Theory and Practice of Development* (1996), which was included in the literature review in the discussion of political ecology.

Historically, development approaches, whether mainstream like SAPs (Structural Adjustment Program) or supposedly alternative approaches like IRDs (Integrated Rural Development), whether from classical economic or Keynesian roots, have defined development in linear, Euro-centric terms, equated it with Westernization, and employed top down approaches to achieve their goals. In the last century, the colonial world shifted to become the developing world, and, after World War II as the world became politically polarized between Soviet and U. S. spheres of influence, mainstream development became synonymous with capitalism in the West and is still largely a tool of foreign policy. Alternative development strategies, aimed at addressing poverty by providing for basic needs that were determined by the assumptions of the particular alternative, were often designed more to promote stability in a region than to bringing about any radical change in addressing questions of inequity (Brohman, 1996: 9-34, 225; Peet and Watts, 1996: 1-36).

Not unlike the problems associated with preservationist approaches to wildlife conservation in East Africa (Western 1994a: 18-19), ill-conceived growth policies after World War II left many countries, including Kenya, worse off by the late 1960s than when the these programs were implemented (Brohman, 1996 202-203). Likewise, Pearl's conception of the West developing a conservation minded community in the Third World (Pearl, 1994: 221-225, 274-283) has much in common with the paternalistic, top down approaches of mainstream and most alternative development strategies (Brohman 1996: 202-217). Modernization theory, which built on heavily economically oriented growth theory by broadening the social perspective, actually saw traditional cultures as obstacles to development. As development progressed, it was felt, the traditional would gradually disappear. In essence, then modernization is synonymous with Westernization (Brohman 1996: 15-21). This attitude can be seen in colonial and later independent Kenyan policy toward the Maasai (see chapter 4).

While I have criticized the ecologists for oversimplifying the human dimension, social scientists and the development community have done so historically as well. For instance, mainstream development approaches have had a decidedly urban bias, which ignored the realities of the agrarian Third World. Alternative approaches, beginning in the 1970s, tried to address this shortcoming by focusing more on rural development through programs like the Green Revolution. Unfortunately, these programs often simply deepened the inequities already present in many countries like Kenya, because they were based on oversimplified views of the societies in which they were implemented (Brohman 1996: 210-216; Gibson, 1999: 1-18).

In addition, development programs tend to view communities as homogenous (Brohman 1996: 220-225). For example, territorial regional planning offered an alternative to the functional approach, which emphasized comparative advantage, by exploiting the periphery in favor of the core. In contrast, regional integration argued for endogenous development, oriented toward territorial integration. This promising approach was bottom up, based on Marxist and neo-populist ideas, and offered the possibility of local autonomy and the mitigation of inequity and poverty (Friedmann and Weaver, 1979: 186-207). Despite these positive aspects, the approach had several drawbacks, however. One of the main criticisms of this territorial approach is that it was utopian. It had a political emphasis at the local level but ignored class, gender, and ethnic issues (Brohman, 1996: 232-237). Territories were treated as organisms, and since an organism cannot have autonomous parts within it, no scale smaller than the arbitrary bounds of the territory could be addressed (Gore, 1984: 230-231).

One alternative that challenges the idea of community is political ecology. Peet and Watts call political ecology the "most important line of recent scientific thinking about environment and development" (Peet and Watts, 1996: 3). It arose from a critique of the homeostatic view of culture held prevalent in ecological anthropology and cultural ecology. It directly challenged the Euro-centric, modernist viewpoint of mainstream development strategies, such as the neoliberal perspective that has grown in strength since the end of the Cold War (Peet and Watts, 1996: 1-5). It is concerned with issues of poverty, environmental degradation, inequity, and sustainability and emphasizes a bottom up approach and that sustainability cannot be achieved without local involvement

(Brohman, 1996: 312-313; Peet and Watts, 1996: 1-36), which follows Western's argument that the local level is where conservation must succeed (Western, 1997: 50).

Along with understanding the realities of a society and moving beyond simplistic views of community, political ecology also emphasizes scale (see chapter 2). This emphasis avoids concentrating exclusively on the local, as some alternative approaches like IRD have done. When forces operating at larger scales have been ignored, plans have been hampered by the political and economic realities at those scales (Brohman, 1996: 220-225).

Political ecology offers the type of alternative evident in the community based success stories presented in *Reasons for Hope* (Krishna et. al., 1997) and *Reasons for Success* (Uphoff et. al., 1998) by challenging the neo-liberal approach to development. This mainstream approach gained momentum during the Reagan/Thatcher era, came into full bloom with the end of the Cold War, and now prevails in most in Third World development plans (Galaty, 1999; 2-6). Neo-liberalism assumes the superiority of democratic and market structures as self-evident and views the liberalization of land policies as beneficial and inevitable, with no hard evidence to support those assumptions. Although the neo-liberal approach recognizes the local level, it is still decidedly top down. The main theme running through the success stories in the above volumes is that while the original initiative often comes from outside the community, through participation the outside initiative is replaced by local initiative. The approach then becomes a combination of top down and bottom up (Uphoff et. al., 1998: 1-10).

If it can be accepted that conservation and development are inextricably linked, then the Framework is as much an approach to aiding in the creation of a development

plan as a conservation plan in places like Kajiado. It is concerned with both wildlife and habitat and issues of poverty and inequity. Peet and Watts argue for increasing role of the political side of the discourse on political ecology in what they call liberation ecologies and note that ecology movements can help show the limits of growth and development (Peet and Watts, 1996: 9-36). While expanding the political aspect is important, I argue that expanding the ecological aspect with scientific ecology is equally important. I have tried to address this need by incorporating a dynamic view of ecology into the framework. If scientific ecology is not given a larger role in political ecology, it is possible that discourse will relegate nature to a mere social construct and thereby discount it. While the way individuals in a particular society view nature may indeed be a social construct, wildlife and their plight are no more social constructs than human beings and their plight. In fact, Peet and Watts warn about these limits, cautioning that not everything should be viewed as a product of social discourse (Peet and Watts 1996; 260-268).

This discussion of development history, along with the literature analyzed throughout this thesis, indicate that to be successful conservation (and development) must be successful at the local level (Western, 1994a). If this is the case, then it makes sense to plan at the local level, while taking into account larger scale realities. Such planning would likely be aided by the kind of contextual analysis explicit in the Framework. While integrated planning already exists, it suffers from recurring problems (see the introductory section of chapter 4). To overcome those problems, I have argued throughout this thesis that the discourse between the social and biological sciences needs to be refined. Through the incorporation of human and environmental components,

emphasizing context and the dynamic aspects of both, the Framework has the potential to aid this refinement.

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